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Telecom freedom 'is not working'

by Donald Kennett
WRITE to the Industry Minister — because he doesn't know that telecommunications liberalisation isn't working. That was the message to computer users last week from Michael Corby, director of the Telecommunications Users Association.

Speaking at a Datapoint user group meeting, Corby said the government had got the structure of the liberalisation mechanism wrong and it should scrap it and start again.

Just as the 1969 Post Office Act had produced a veneer of change with no effective difference, the 1981 British Telecommunications Act had the same goal of making BT into a more commercial type of organisation and had failed in the same way by enshrining BT's monopoly, he said.

"The current Bill was necessary because of the problems with the last one," he said, "but it has all the hallmarks of being the same thing."

In Corby's view Ofel, which will administer BT's operating licence, will not be a professional enough body — on present evidence of the government's plans — to do a proper job and will just add to the present fog.

Making Mercury the only network competitor will fail to provide effective competition for BT.

And the mechanism set up to oversee the liberalisation of network attachments is ill-conceived and amateurish as a result of trying to do it on the cheap. The Department of Industry at the top has set up a steering committee with about 25 members and four civil servants. It is very large because it has just about every conceivable interest represented on it, thinks Corby.

Appointing the British Standards Institution to draw up the standards was a grave mistake because of the way it works by consensus.

"In practice it starts off with a draft paper from BT. This deals

with small, simple issues, but just for telephone answering machines it was 90 pages long. And it is the same procedure for every single item which might be attached to the network.

The operation of the British Approvals Board for Telecommunications, which after two years' preparation has so far approved just one telephone, was illustrated by a Datapoint executive who said: "We have been fortunate in beating BABB by going through the old BT procedures."

To which Corby replied: "Isn't that ludicrous, that we supposedly have liberalisation and people think they are fortunate to be going through the old BT procedures?"

He went on: "Business thrives on data communications, PABXs and telex. Small PABXs are supposed to be liberalised in July. What kind of position are decision makers in? It hasn't happened for anything else; when it is going to happen for this?"



CORBY... Nothing different about the new Bill.

Top business figures tackle world trade barriers

by John Kavanagh
A POWERFUL group of international business and government leaders is working to bring down barriers to international trade in services ranging from banking to the computer bureau business.

The move has been welcomed by the UK services industry, which is restricted by national communications monopolies and data protection laws.

The 19-strong group is chaired by Robert Strauss, one of former US president Jimmy Carter's right-hand men. It includes Sir Peter Green, chairman of Lloyd's of London, Sir Jeremy Morse, chairman of Lloyds Bank, other leading commercial and industrial figures and former government ministers from Belgium, Sweden, Japan and Malaysia. The group is backed by the Trade Policy Research Centre, a non-profit making body which is privately funded.

"Trade in services has become a major component of world trade," said the centre. "Alarmed by increasing impediments and distortions to trade in services and recognising the growing contribution of services to employment, exports and growth, the committee agreed urgent international action."

The commitment will look at international rules and the "proliferation of national restrictions to international information flows".

Chris Gent of the UK bureau Baric and chairman of the Computing Services Association's bureau group, said the main problem for UK services firms was the monopoly the national communications authorities had in other European countries, especially when British Telecom's monopoly was being eased (see story page 2).

Alvey is accepted at last. But there are still one or two reservations in the industry, as George Black reports

Grant cut makes it hard for supremo Oakley



HUGHES... Confident.

The newly-appointed supremo, Brian Oakley, of the Science and Engineering Research Council (SERC), admitted that the top-level decision to limit the grants would make his job that more difficult.

"It doesn't necessarily weaken the whole programme, but if you want to get real co-operation this is certainly an impediment," he said. "A lot of the best software manpower resides in these smaller firms and I certainly hope they are not going to be excluded because of this."

He did not think companies would be deterred by the requirement to pool the resulting inventions. "After all, they will retain the ultimate property rights, so it doesn't mean they won't make a profit."

Another criticism was levelled at the validity of the VLSI investment. BIS Applied Systems chairman Roger Graham asserted: "We should only spend money on it if

there is clear evidence that British manufacturers will really gain a significant share of the world market."

Graham is convinced that an Alvey-type programme will only succeed if it is firmly addressed to the marketing of products.

The case against the 50% upper limit was put in the House of Commons by Labour industry spokesman John Garrett: "The spread of new systems will be hit by this penny-pinching restriction," he said, "and many small, innovative companies will be unable to join the programme."

Logica chairman Philip Hughes, an Alvey committee member, said the change would seriously weaken the programme. "What the committee had in mind was a highly directed programme of research leading to useful products on the US and Japanese model." The idea that firms getting 90% subsidies would not be committed is ridiculous, he said.

With the criticism came much approval of the appointment of Oakley. Hughes said: "I have a lot of confidence in him."

Technical director for Software Sciences: "We obviously will be involved but at this lower percentage we shall be thinking harder about the sharing of results. The scheme could come down to just a few big firms, whereas the idea was that everyone would pitch in together."

Where will the funding come from?

ALVEY committee recommendations for a £350 million, five year advanced information technology ("fifth generation") research programme has been accepted, but there will be no new money.

The government rejected Alvey's proposal that it should contribute 90% of some projects, limiting its share to 50%. Overall its share is to be 57%, compared to the recommended 60%.

It will put in up to £200 million — £110 from the Industry Department, £50 million from Education and £40 from Defence. The industry is being asked to inject £150 million.

The money will come from funds already allocated to the three departments.

Industry secretary Patrick Jenkin said the eight-month delay in

making the statement was due to talks with literally hundreds of private firms — though informed sources have said it was caused by the PM's personal doubts and the difficulty of recruiting a supremo.

The £30,000-a-year top job goes to 56-year-old Brian Oakley, secretary of the Science and Engineering Research Council, who will start work at the beginning of June — two months later than Alvey wanted.

He will take on four deputy directors, one for each of the chosen fields: VLSI chips, software engineering, intelligent knowledge-based systems and the man-machine interface.

He reports to a supervisory board headed by Marconi chairman Sir Robert Telford.

Defending the reduction of public support to 50% Jenkin said: "There have been too many examples of science being government-financed and then having results divorced from the market because there was no industrial commitment."

He denied that this would exclude smaller companies from participation.

He accepted Alvey's view that foreign multinationals should take part only if they agreed to share their achievements with UK firms, adding: "They must exploit the technology which is developed in the UK and we shall require cast-iron guarantees that their technological ideas will not find their way abroad."

This could be ensured by following rules on intellectual



OAKLEY... Talked with hundreds of firms.

Shipbuilders' switch to IBM attacked by union

by John Riley
BRITISH Shipbuilders, which has opposed orders to switch to foreign shipyards, was attacked last week for switching from ICL to IBM computers.

The nationalised company, British Shipbuilders, which runs Britain's 30 or so shipbuilding yards, has been switching from ICL to IBM mainframes and ICL has not even been asked to submit tenders, claims the Association of Professional, Executive, Clerical and Computer Staff (Apex).

The union is especially concerned because of reports that BS is planning considerable investment in computer technology, particularly in CAD/CAM.

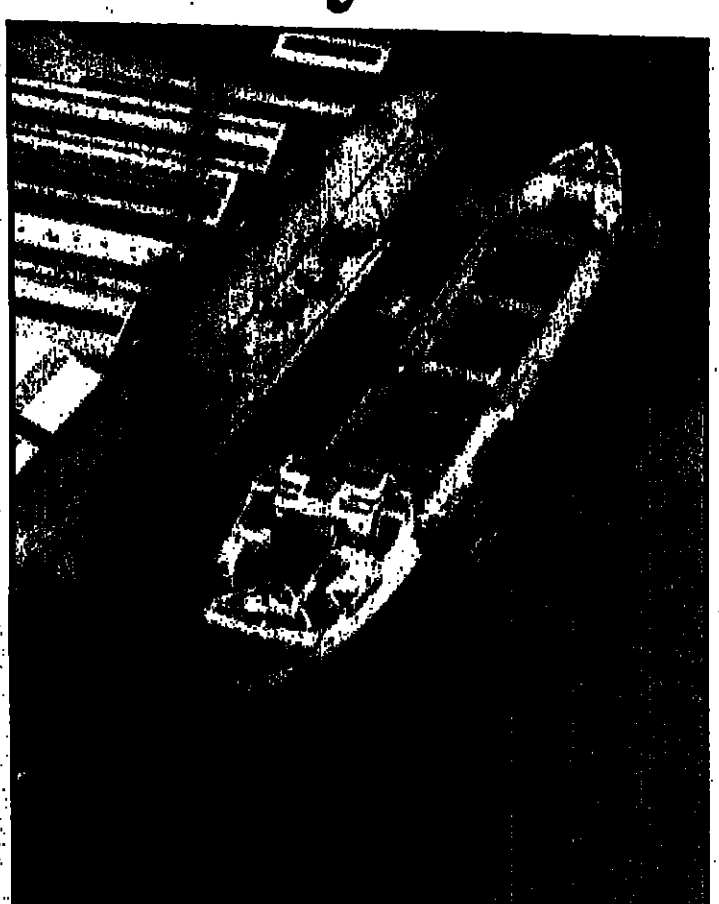
Keith Standing, national secretary of Apex and a member of the Shipyard Negotiating Committee of the Confederation of Shipyard and Engineering Unions, said: "In 1979, four out of the five Scottish shipyards had ICL mainframes, whereas now four of them have IBM mainframes."

However, both ICL and British Shipbuilders say they are in close contact. "As far as we know we are being invited to tender, and have gained £1.5 million of business out of British Shipbuilders in the past two years", said an ICL spokesman.

Apex claims that ICL has not been asked to tender for mainframe replacements on IBM sites, although IBM tenders for ICL replacements, and that ICL was not asked to tender for the new Tyne Shiprepair system or the new word processing equipment (IBM) installed at British Shipbuilders' head office.

Apex claims that IBM now supplies nine out of the 10 largest shipbuilding companies in Britain.

"It is a contradiction that a nationalised industry insisting that



"IBM now supplies nine out of the 10 largest UK shipbuilding companies."

AT & T International thinks small with plans for European market

by Donald Kennett
AT&T INTERNATIONAL will have a slow build-up in Europe. A senior spokesman for the parent company, Bill Mullane, said in London earlier this week: "AT&T International is a very small operation and it can afford to remain humble for a long, long time. We will be visible, but we will be well down the list of top companies for some time."

The AT&T annual report for 1982 revealed that during the year the international division had more than doubled its sales to \$403 million.

ATT's European presence in Europe will be most visible in the immediate future through the joint venture with Philips announced last year, details of which are expected early next month. But the company already has offices in 14 overseas countries.

"We thought the Philips talks would be finalised this week," said Mullane, "but it isn't moving as quickly as everybody thought."

The delay is simply due to the amount of detail to be discussed in deciding how much each party's contribution is worth.

Mullane said that AT&T would certainly not adapt its whole product range for international markets. But that still leaves plenty of scope.

First, new products from the parent company would increasingly be designed to world standards and with world markets in mind from the outset.

Then there are the Bell Labs patents, which are registered at an average of one per working day throughout the year. Many European companies already use Bell patents and it has been said that of the 17 discoveries which made the electronic age possibly 12

came from Bell.

Added to these are the 256K RAM chips which are in production at AT&T's manufacturing subsidiary Western Electric.

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Euro MP warns on EEC subsidies

John Riley
EUROPEAN Watchdogs will ensure that companies do not abuse their Alvey programme money with Common Market rules, top IT policy maker Raymond Appleyard warned last week.

Appleyard, who is in charge of research and development in the European Community, said, "We would not expect industries to collect 50% subsidies from the Alvey Programme and Appleyard is concerned that the Community effort must not cause

national efforts to be reduced, but at the same time industry must not be over supported."

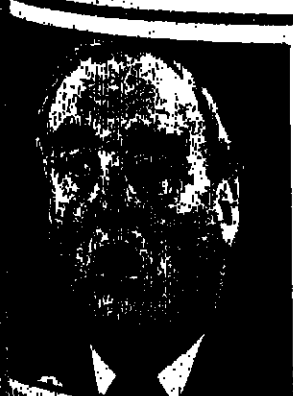
Alan Benjamin, Director of Communications for software house CAP, which is involved in feasibility studies in advance of the main Esprit programme disbursements, wants more support for industry. "Both Esprit and the British government initiative will suffer because small companies cannot afford to pay 50% of research and development projects."

"Many of the research ideas and innovations come from small systems houses and software com-

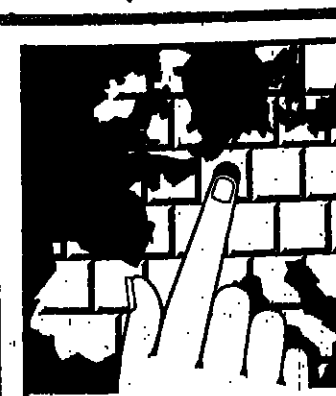
panies and without their software engineering and man/machine interfacing programmes will be affected in particular."

The Labour Euro MP Barry Seal, who was formerly a Senior Lecturer in System Control at Huddersfield Polytechnic, does not consider that the British initiative will affect European plans for international IT collaboration.

However, he commented that "the £200 million announced by the government is not nearly enough when compared with the Japanese and US IT research and development budgets."



Appleyard... 3



Meddling may delay Esprit... 8



IBM users put on a happy face... 10

News Analysis 8

IBM Users Conference 10

Software File 11

Company News 12

Micro News 13

Profile, Platform 14

Downsizing 15

Workplaces 16

People 17

Books 18

Products 19

Crossword 20

Jobs 26/47

Contract Jobs 22

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Tax threat to US software industry

by Howard Karten
US COMPUTER industry representatives descended en masse on an Internal Revenue Service (IRS) hearing last week to protest at proposals that would eliminate tax credits for software development costs.

The IRS proposes to limit tax credits for software which is not viewed as having an element of risk. The immediate effect would be to drive up costs for businesses which spend considerable sums in this activity.

The longer-term effects were hotly debated, with one well-known US accounting firm, Arthur Andersen and Company,

claiming that the ultimate effect would be to threaten the position of the US as a world leader in software development.

The hearing drew representatives from IBM, the Association of Data Processing Service Organisations (Adapso), the Computer and Business Equipment Manufacturers Association (CBEMA), and other electronics trade organisations.

Spokesmen for these groups testified that the IRS proposal ran counter to the intent of the law.

The industry has gained the support of 27 Congressmen, including Republican representative Eli Zischau who represents Silicon

Valley and was a founder of Systems Industries, which makes disc and tape storage systems.

Software development costs are a significant part of the industry, Zischau told the hearing.

The IRS proposes to disallow tax credits for software developed using standard or well-known programming techniques. But software development costs would still be deductible as part of the normal business expenses of a business.

Spokesmen for CBEMA estimated that the proposed IRS ruling would cost their members an estimated \$50 million.

The IRS is expected to decide the matter in the near future.



POLLARD... "Still selling concepts rather than products."

Social effects of chip reports are biased, claims study...

by John Riley
MOST material written on the social effects of the microchip is biased and oversimplified, aiming to influence and not to inform, says the most comprehensive study yet to be published on the subject.

Commissioned by the Dutch Ministry of Social Affairs, the 360-page report concludes that it is difficult to evaluate the effect of chip technology on conditions and quality of work. There it says, few adequately quantified statistics on job types and functions within each economic area and in any case a lack of thought-out methodology to deal with it.

The evidence was gained from a nine-month study of around 500 key documents and formal interviews in 10 countries, including Japan and the US.

With its international perspective

on the introduction of microelectronics into the workplace, the report finds that "the attitude towards the chip varies enormously between countries. In booming economies, such as Japan, microelectronics are seen as a benefit, whereas stagnant and depressed economies regard the chip as another device to boost unemployment and attach to it a blame out of all proportion to its impact."

The main concern came out as being "insufficiently active (in fact basically reactive) towards new technology. Unions are aware of this situation, but it will probably be some time before they adopt an anticipatory and active role in organisational and job design matters."

While much has been written about the effect of word processors on typing work, the report concludes that the influence of interactive data processing systems

on general clerical work is greater. It finds that the introduction of new technology may affect women's jobs in certain types of production and, in the West, in typing, although it points out that interactive systems affect jobs for both sexes. The overall conclusion regarding women is "there is no evidence of whether microelectronics systems will affect women's career prospects either adversely or favourably."

New technology means a need to restructure apprenticeship training which is often geared to outdated requirements, and results in an increasing demand for skilled qualified and educated labour and a decrease in demand for unskilled production work.

"The Impact of Chip Technology on Conditions and Quality of Work. A Report by Metex Consulting Group for the Netherlands Ministry of Social Affairs and Employment. £30. Further information on 01-225 7634.



GRANTHAM... Buying British.

...but union has no time for debate

by John Riley
A PROMINENT computer industry trade union could not find time to debate new technology motions at its annual conference held last week.

Motions put before the Association of Professional, Executive, Clerical and Computer Staff (Apex), but not discussed, related to the Data Protection Bill, new technology and health and safety, and new technology and unemployment.

But the union did resolve to computerise its administration.

The main topics discussed were union structure, equal opportunities and the current economic situation.

By contrast, at Bifu, the Banking and Insurance and Finance Union's recent annual conference, new technology was extensively discussed for the second year running and four motions were passed.

The main resolution, which could cause havoc in the financial world, was that the union will promote resistance to the introduction of new machines if employers do not sign new technology agreements with the union.

Roy Grantham, general secretary of Apex, said: "Our new technology national and regional committees are very well advanced and work in this area is fully under control, on the level of day-to-day

activity rather than appeals for the future.

"The motions proposed were all highly marginal and all are covered by existing policy."

Grantham put his union's money where his mouth is by affirming that Apex will be buying a British computer.

Apex's data protection agreement with Lucas late last year was one of the first to be negotiated by a union. The union has just released a booklet setting out new grades for clerical and office groups taking account of new technology.

It is available from Apex, Worple Road, London SW19.



KERVATOS... Limitless expansion.

Ring design for US private exchange

by Donald Kennett
ZTEL, a new US telecommunications company, is using a stack of interconnected local area networks as the basis of its private telephone exchange, the PNK (Private Network Exchange).

The local area network it has chosen is the 10 Mbit-per-second token-passing ring design for which a draft standard is expected to emerge in June from the US IEEE (Institute of Electrical and Electronic Engineers) committee 802.5, based on a proposal from IBM.

Ziel vice-president for sales and marketing, William Karayanos, said that using the ring-based architecture meant that further rings and processors could be added to expand the exchange's capacity almost limitlessly. The system's addressing scheme allowed for 131,000 devices, he said.

He added that the token-passing type of network allowed the customer to choose at the time of configuring the exchange what would be the maximum delay his traffic would be subjected to.

Using a standard network meant that other manufacturers' equipment could be plugged straight into it, he said. The fact that the system software was written in the C language and structured according to the International Standards Organisation seven-layer model for open systems interconnection meant that it was a straightforward task for systems houses and sophisticated users to customise their exchanges and add value-added service features to them.

Each switching processor can handle up to 512 devices, including data devices transmitting at up to 56 Kbit-per-second, digital telephones transmitting at 64

Kbps, facsimile equipment and compressed video image systems.

Application processors provide services such as network management, protocol conversion, message forwarding and online directories. The company has also designed a range of digital telephones, one of which has a 40 character display - which can be used to show who is calling - and 20 special function keys which can be used to send standard messages such as "call me back" or "returning your call" with a single key-stroke.

The company was set up in January 1981 with \$2 million to start development work from Adler & Co and General Electric of the US. It plans to announce an intermediate funding package which Karayanos says will break all records for the PABX industry. It is believed to be in the region of \$30 million.

SALES BRIEF

Cray lands 'super' orders from Europe

CRAY Research had a good week with two big orders for supercomputers on the way from Europe. The company has clinched the first sale outside the US of the I/M series supercomputer, announced by MGI memory last September, to the French oil company Elf for \$71 million.

The European Centre for Medium Range Weather Forecasting in Reading, Berkshire, has been cleared by its member governments to order a Cray X-MP computer, currently priced at between \$9 million and \$11 million.

Speedy system

LEADING forwarder of freight, Unispeed International, is investing £500,000 on a Digital Equipment PDP-11 system to hold information of availability of cargoes, and scheduling of flights and surface deliveries. Management Control Systems is supplying the software, and tailoring the system for Unispeed.

Geac booked

THE British Lending Library has chosen Geac Computers of Bristol to supply a package to catalogue in 4.5 million books, and hold details of recent acquisitions. The package will run on Geac's 8000 minicomputer, and will be up and running by mid-1984.

Iraqi deal

PLESSEY has signed a technology transfer agreement with Iraq. The deal with Electronic Industries covers push-button telephones and accessories with production volumes estimated at 100,000 a year.

Soviet spares

REDIFFUSION has just completed delivery of 50 computer systems to the Soviet Ministry of Gas for spares and maintenance planning on the Siberian gas pipeline. The order, worth £9 million, was placed in October 1981, but was delayed by the American government's embargo on the pipeline. The systems include 240 teletype terminals with Cyrillic videotext.

Aim's record

AIM, the Hull-based writer of software for legal applications, won record sales of £250,000 for its Charter package in March. The systems went to 15 law practices for accounting, time recording and exception recording handling.

£2.7m contract

A £2.7 million contract for Prestel equipment has been won from the Far East by GEC Computers, part of the huge GEC electrical group. The contract, from the Malaysian government, covers a five-year period, and includes GEC 4000 computers, terminals and British Telecom Prestel software.

BICC picks CA

CABLE maker BICC has plumped for Computer Automation to supply a real-time operating system for development of a process control network. BICC will use Computer Automation's Cartos operating system, which will be supplied with a minicomputer in a £50,000 contract.

British hat-trick

A SMALL UK software house has picked up three US orders for a new text retrieval system for microcomputers. The American Psychological Association, which has already tested one of the Sift systems developed by Delta Design and Graphics of Nottingham,

Petrol PoS trial expands

by Donald Kennett
BRITISH Telecom Merlin last week outlined its plans to become a dominant force in the UK office automation market.

And chief executive Gordon Pocock said Merlin was very likely to market overseas when the UK organisation is in place.

The main plank of the strategy is to be the provision of a broad range of customer support services and a commitment to open systems interconnection.

The organisation's first three products are versions of ICL systems, supplied under an agreement announced in December. They have been enhanced by the addition of autodial modems and the option of access to the telex network via a link to a BT Puma electronic telex terminal.

The products are the £6,775 M3500 communicating word processor based on the ICL 2200, made by Logica and originally sold by the now defunct Nexos; the £5,270 M2226 small business computer based on the eight-bit ICL Personal Computer originally made by Rair; and the M1100

VDU which has an autodialler capable of storing four telephone numbers and two log-on passwords.

For the UK market, Pocock is planning a slow build-up to nationwide coverage over the next 10 months. "BT is going to go steadily and decisively into office automation," he said. "We'll only supply where we can service and we'll only roll out the whole organisation when we can supply the whole care programme. We're going to do it slowly and carefully so we can be sure we do it right."

"Our conviction in working to open systems means that the user won't get locked in. We will expand the opportunities for him."

Merlin will have three regional offices by March next year, supplemented by local units in telephone area managers' offices or, where those are unsuitable, in their own premises. The first regional office, where all the customer and own staff training will be done, opened in Ealing near London last year. Others are planned for Leeds in July and Birmingham next March.

Customers can use any of three types of plastic bank card to pay for petrol in a transaction lasting four seconds or less.

RP marketing director John Hawshaw said last week: "You often hear of this type of experiment going on and it then fades quietly away. Well, ours hasn't faded quickly away, it's being extended."

Unilever Bank development manager Alan Hynd said: "We are only bank with a suitable network. The others are all geared up support back office systems, but we tended to do it at the customer end first."

In the Counterplus service BP pays about £3,000 for the Fortron cashiers and customers' terminals and the Lion Systems Development's 1,200-bit-per-second modem at each petrol station, while the Clydesdale pays for the telex telephone line to its nearest touch and the modem.

The cashier slides the customer's bank card through the terminal and enters the price of the petrol, while the customer keys in his or her personal identification number on a separate terminal which displays the price being paid.

PRINCE PHILIP attracted the limelight at last week's Mantech symposium with a statement about the nuclear arms debate.

But computers came a close second in the popularity stakes.

The symposium, organised by the Fellowship of Engineering, was intended to provide a forum for the discussion of the social problems created by technology. And it was obvious that the contributors saw the computer as the most dominant influence in contemporary technology.

Many speakers said that as a result of the application of microprocessors, computing techniques and new software, society will need to adapt to more flexible working hours, educational and professional training schemes will have to be modernised and society must cope with the vulnerability that will derive from basing essential services on computers.

The strongest theme was that



HAWKSHAW... Not fading.

CACI forges a Personal link

by John Kavanagh
ANOTHER big US name has joined the growing group of services firms supporting links between personal computers and mainframes. The big US mainframe consultancy CACI has joined Cullinet, Informatics, Management Science America and McCormick and Dodge with products aimed at tying the IBM Personal Computer to other IBM machines.

CACI has made its first move into the microcomputing market with a relational database for the Personal Computer which is claimed to be compatible with IBM mainframe database products. The company also has word processing and interactive training packages for existing big-selling products such as Wordstar and dBase.

CACI is distributing the products in Europe for its US owners. But it is also developing its own packages in API and working on a new low-level language.

The R/L, relational database system is from the TIE

same name. Ray Jordan, head of CACI's microcomputing operation in the UK, said this product was significant because it was partly compatible with IBM's SQL mainframe query language. A version for the CF/M microcomputer operating system is being developed.

The Volkswriter word processing system from Lifetree Software also runs under CP/M. It is one of the best-selling Personal Computer products in the US. CACI and Lifetree have together developed front-ends to enable the system to handle German, French and Spanish as well as English. Volkswriter costs £206.

The training packages are from AT Training Power. They cost £50.

"We are aiming the training packages at dealers and retailers to support their sales of established systems," said Jordan.

"As an international consultancy we have many multinational clients looking at the Personal Computer as a workstation to their mainframes; we will be aiming the

Merlin outlines its master plan

by Donald Kennett
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The strongest theme was that

the application of computers will lead to a drop in unemployment. This was seen as inevitable because of the competitive need to reduce costs and increase competition.

"The impact on labour is already visible," said Professor Herman Feshbach, President of the American Academy of Arts and Sciences. "Those without skills will find it increasingly difficult to find jobs."

"It is unlikely we shall see full employment again," added Viscount Caldecote, President of the Fellowship of Engineering. "The structural changes which some about as a result of the application of computers to manufacturing mean we will be able to produce what we need with far fewer people."

But he pointed to rising employment in the computer industry and suggested that more people would find employment in the leisure and service industries.

For those who make the computer revolution does not make redun-

dant, a change in work patterns is forecast. Professor Gunnar Hambræus, chairman of the Royal Swedish Academy of Engineering Sciences, said: "There are many signs of a loosening of a traditional 40 hour working week."

Umberto Agnelli, vice chairman of Fiat, said: "A growing number of workers will be able to do target oriented work rather than sticking to rigidly programmed procedures, and working hours will be much more flexible and tailored to individual needs."

Another problem highlighted was that of electronic loneliness, a term coined by Professor Hambræus to explain the situation in which "our youngsters in Europe spend several hours a day before the TV screen and another substantial amount of time on playing video games."

But, it was Prince Philip who noted that: "No amount of technology could improve the quality of the material communicated."

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READ... "We hardly ever lose a 1100 account."

Sperry spends to improve storage

by Andrew Thomas
SPERRY has bought into a subsidiary of Control Data in a bid to enhance its range of mass storage devices. The amalgamation of its Information Storage Systems operation at Santa Clara, California, with Magnetic Peripherals, 67% owned by CDC, gives Sperry a 13% share of the combined operation.

Other companies with an interest in Magnetic Peripherals are Honeywell with 17% and Gil Honeywell Bull with three per cent. The Santa Clara plant is responsible for the development and manufacture of disc stores, and now becomes the MPI Santa Clara disc division.

And Sperry has updated its IBM interconnectability with the development of SNA gateways. Up till now, Sperry's IBM communications were restricted to the old binary synchronous communications protocols.

The SNA software runs in Sperry's Distributed Communications Processor (DCP), and first releases are expected in the summer. The initial release will permit the connection of IBM 3270 and Sperry UTS 4000 terminals to

DCPs, allowing them to communicate with either IBM or Sperry mainframes.

All Sperry systems and terminals will appear to the IBM network as 3270 terminals using SDLC protocols. Interactive applications can run under CICS, IMS or TSO, and batch operations under JES2 or JES3.

Mike Russell-Carter, UK director of product marketing, hopes the SNA facility will win more users from IBM.

"Relatively few of our customers are first-time users," says Russell-Carter. "The migration of our competitors' users to Sperry systems has been the basis of much of our base growth for many years."

Russell-Carter claims that 20 UK IBM sites have gone to Sperry in the last two years, and that 20 of the 70 UK 1100 installations have been won from ICL.

"ICL is the prime source of new accounts," says Bill Read, general manager of UK computer systems operations. "We hardly ever lose a 1100 account unless it's for political reasons." His words sound particularly bullish in light of reports at the end of last year which cited a severe slide in order books.

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May 11th 1983

Lowest bid 'not always the best'

by John Riley
P.H.U. authorities should not always accept the lowest bid when buying computer equipment, said Information Technology Minister Ken Baker last week. This view is in marked contrast to the government's traditional purchasing policy.

Addressing a meeting of Britain's top Health Service administrators, Baker said: "Traditionally, the Civil Service as custodian of the public purse, takes the lowest tender when contracting."

"But if we want true value for money, public buyers must have close relationships with suppliers to explore areas that are mutually beneficial and not always take the lowest bid."

Baker affirmed that medical electronics is a priority area and called on close collaboration between British hospitals and medical electronics companies for equipment and software trials. Collaboration would help build up

the reference user base in the National Health Service which would help companies export their products.

He gave the example of ICL, which, he said, "is hoping to win contracts for health care systems in Singapore on the basis of its success in winning contracts in the UK."

There was an exhibition of 22 companies involved in medical electronics, including the two software companies in the DoI's Micros for GPs scheme, CAP and British Medical Data Systems, as well as ICL, Universal Computers and others.

There were several American companies exhibiting, including Burroughs, Apple and NCR. Some had felt squeezed out of the large contracts but were pressing ahead on the smaller discrete applications.

Graham Roberts, chairman of the National Health Service Computer Policy Committee, delivered

ROBERTS... wants health boundaries abolished.

a paper to the meeting calling for the abolition of boundaries between the Department of Health, and the regional and district health authorities.

The NHS is considering how it

can move over to database management systems effectively and efficiently.

It is also pondering on how best to introduce microcomputers and minicomputers.

French five year plan needs revamp

by Jack Gee
FRANCE'S five year, £14 billion programme for the electronics industry needs to be revamped.

A top government advisor has issued a report calling for more coordination of the overlapping efforts of government agencies.

Philippe Lemoine, a senior civil servant at the Ministry of Industry and Technology, drafted the report at the request of Prime Minister Mitterand with the aim of giving a new spurt of energy to the Filière Electronique.

Lemoine praises the UK for creating a post of minister for information technology. Launching a major effort to make France computer conscious, he calls for France to set up an information technologies commission.

Lemoine's 142-page document has been the subject of a series of press leaks (Computer Weekly recently quoted his "census" of computers and robots).

He says bold steps must be taken if France is to achieve its target of ranking equal with Japan in the new technologies by the next decade.

France, which had 20.7% of installed computers in Europe five years ago, now possesses only 19.5%. At the present rate of decline it might have only 17% by 1985, according to the Lemoine Report.

In microcomputers the French share, in terms of value, is 15.3% compared to Britain's 28.7% and West Germany's 24.1%.

Lemoine voices pessimism about the prospects for France's Teletel Videotex technology. It says that each of the 2,300 terminals installed in homes at 12,000 near Paris during a two-year community test is being inaugurated only 1.5 times weekly on average.

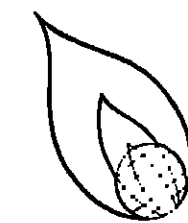
The senior civil servant also complains that only 500 teachers a year are being trained to help schoolchildren use the 5,466 microcomputers scattered across France's 77,000 schools.

Lemoine reports that an information technology commission should harness the efforts of government agencies for computer technology, which span the key areas in which urgent action are required.

Lemoine lists these as central and local government, small firms, big firms and service industries, education, and communication. Lemoine also condemns the government's purchasing policy which favours nationalised companies, particularly CIL-Honeywell Bull.

He says it should buy computers and other electronic products from the most competitive suppliers.

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Jacqui

COMPUTER TRADE SHOW REPORT



DOHERTY... "No room for boardroom boys pussyfooting around."

Boards 'shouldn't pussyfoot'

by Boris Sedacca
THERE is no room for boardroom boys pussyfooting around," were the words of Michael Doherty, the first speaker at the Computer Trade Conference, in describing the computer dealer market place.

Doherty is regional sales manager for Northamber, a fast-growing distributor of computer printers.

"I am not saying that we should be cowboys, but decisions have to be made very quickly in this business, and established companies often regard fast-growing newcomers as cowboys," Doherty said.

Russ Nathan, managing director of Romtec, a market research consultancy specialising on the computer trade, made the surprising statement that newsgroups are the

largest potential market for volume sales by microcomputers.

Romtec surveyed around 1,200 existing and potential users of computers about the role of microcomputers, and identified 35 vertical markets. A surprising outcome of the survey was that the most popular benefits sought by the users are the hardest to quantify. Tangible benefits such as lower stock levels, reduced overheads and improved cashflow were the least popular.

"Having a software package which meets the requirements of a vertical market does not by any means assure financial success," Nathan contended.

"It helps to know what the market will pay for the package but it is what you must provide with it that may not be fully taken into account. Preparing and publishing

documentation professionally is a non-trivial activity in terms of resource and cost. If it is not done properly, margins can soon be eroded by customer queries."

Nathan claims to have identified some unpublished markets and adjusted popular acclaim for better known markets. "For example, would you have thought that newsgroups sector has the top volume potential? Or would you have believed that the insurance brokers sector has less volume potential than grocers?"

Delegates were treated to a surprisingly candid reply by IBM to a question from the floor about its requirement that dealers must also sell other manufacturers' kit to qualify for a dealership.

Nigel Hensell-Thomas, manager for personal computing dealer marketing at IBM, gave two

reasons. "Firstly, there is always the possibility that we get out of a market so we do not want to pull the plug on a dealer. We are not in the business of putting people out of business."

"Secondly, it is the nature of retailing that IBM may not have a piece of software required by a user, and the dealer should not lose a sale because of this," he explained.

It is tempting in the face of success to forget where the money is to come from for new sales. Gwyn Jones, chairman of Business Micro Systems, warned against this.

"One of the best tips I can give is to keep an eye on the cash most closely than the financial director because by the time he finds out, trouble will have struck and he will be on to you to increase sales to get more cash in."

Middlemen grow in importance

by Boris Sedacca
THE growing role of middlemen in providing hardware and software to computer users was brought home to delegates with considerable force last week at the first annual Computer Trade Show and Conference.

Major manufacturers recognise that volume sales in an exploding market can no longer be achieved by hiring more and more direct sales staff.

Speakers at the conference made clear that data processing managers will increasingly find themselves involved with middlemen and intermediaries when they want to buy equipment.

The trade show and conference, held at Wembley, is sponsored by Computer Weekly and its sister journals.

It is representative of the changing channels that are being formed between manufacturers and the ultimate end user of their products.

The launch in the UK of the IBM Personal Computer earlier this year is a case in point. IBM will not sell direct to an end-user for quantities of under 20 machines.

There is nothing remarkable in

the concept, which is practised widely both in and out of the computer industry and has been for some time.

But for IBM, it marks a dramatic departure from its past stance of keeping direct control of the way products bearing its label get to the end-user.

Although control of this activity is now delegated, IBM takes few risks and potential PC dealers are subjected to rigorous vetting before they can qualify for the role of dealer.

Particularly important to IBM is the dealer's ability to support the product on their own premises.

On the other hand, Digital Equipment (DEC) delegates the sales function but still insists on maintaining the equipment itself. The dealer is obliged to offer Digital's maintenance agreement to the end user when it sells a DEC personal computer.

At the other end of the scale, anybody prepared to put cash up front to the tune of £1,500 can become a Sinclair dealer, the only stipulation being that the dealer must offer the complete Sinclair range of products.

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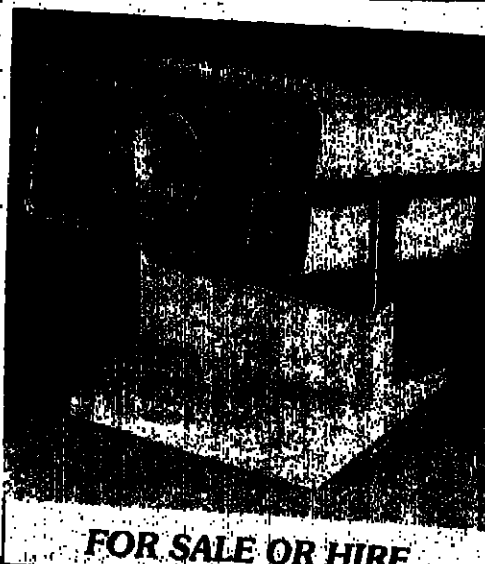
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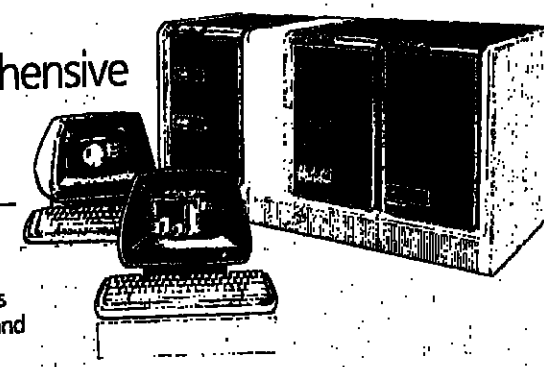
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Will the Esprit programme make Europe the IT leader? Or will rivalry and bureaucracy wreck it? John Riley reports

Meddling ministers and cash squabbles threaten Esprit

EUROPE is worried and its commissioners on the European Commission are taking action. The Commission will try to outflank the fifth generation challenge from Japan and the US — by approving the 10 year full Esprit programme (European Strategic Programme in Research and Development in Information Technology) this week.

Critics are worried that, after the inaugural launch, the programme, which is likely to cost £2.5 billion, will go the way of other Community data processing programmes. In other words, they expect bureaucratic delay, insufficient funding and commercial and national rivalries.

The main problem is the long lead times between a programme's initial proposal by the Commission and its approval by the Council of Ministers. There is then a further delay between approval and allocation of the budget, as history shows.

For instance, the £9.3 million Multiannual Informatics Programme to promote technology transfer was proposed in November 1976, but not approved until September 1979.

The £24 million Microelectronics Programme to promote microcircuit design was put forward in September 1979 and approved in December 1981. The Microelectronics Programme was further delayed and the first contracts have only this month been decided.

The proposal for the headline-hitting main Esprit programme is to be announced in May, and Euro MPs, led by Belgian Fernand Hermann, want quick approval.

Despite the headlines the work so far has been towards feasibility and pilot studies. Several companies are working on six month feasibility studies and including Imperial Software Technology, Seicon, Bosys, CAP, GBC, Logica and STL. Contracts for 16 one-year pilot projects for Esprit worth around £7.2 million are being negotiated and their announcement is imminent. But these have gone ahead before the main Esprit programme has been agreed.

The revelation of Japan's plans for its fifth generation computer programme in November 1981 shocked European politicians, administrators and industry, and was the spur to the genesis of the Esprit programme.

Viscount D'Avignon, vice president of the European Commission, was the driving force in getting European IT companies together to discuss collaboration. The result was that 100 representatives of 12 companies, GEC, ICL, Plessey, Siemens, AEG, Nixdorf, Thomson-CSF, Cii-Honeywell Bull, CIT-Alcatel, Olivetti and STET, formulated the Esprit draft policy.

The aim of Esprit is, says D'Avignon, to enable Europe to innovate research and development and break out of the circle of "catch-up" research and development, following Japan and the US.

"We should achieve technological parity by eliminating duplication of pre-competitive research and development and by ensuring that research teams achieve the necessary critical mass to obtain results," he said.

The draft Esprit policy, which is likely to be largely incorporated into the final policy, aims to link the disparate aims and emphasises within European research. It points out that present government defence related research has slow application in the commercial sector, while industrial research



The finger points at Brussels. Will Euro Ministers be quick to approve Esprit?

aims at producing a quick return on investment.

University research is often inadequately articulated with industry's needs, and there is duplication of research due to lack of inter-European collaboration between small companies.

There are five main areas in the draft programme, and the 16 one-year pilot projects, to be announced in May, will concentrate on these. The areas are advanced microelectronics, software technology, advanced information processing, office automation and computer integrated manufacture.

It is hoped to achieve major breakthroughs in each, and to allow the

ware process. Instead of software being about labour intensive software as at present, it is intended to have capital intensive software.

This means an alternative to the present situation where the program is the solution. Instead advanced information processing systems will help choose the solution. Systems will perceive information through a wide range of sensors, relate it to knowledge already stored and create new knowledge using rules and inference.

The office automation programme will develop a multi-media interface for all office communication needs and develop off-linking all countries.

It is expected that initial concentration in these areas will make conditions right for innovative lift-off to outflank the challenge from Japan and the US.

But apart from expressing concern over bureaucratic delays, the recent session of the European Parliament was worried about too much emphasis on sequential processes and out-dated computer designs.

And other people are sceptical. A comment from a member of a leading British software house was "I don't believe you can have successful innovation by committee." Another opinion from a Scandinavian computer manufacturer was "each company will be looking over its shoulders at the other."

A fundamental question is whether enough flexibility has been built into the programme to accommodate discoveries forcing a total reorientation of direction.

opportunity to follow up spin-offs in unexpected directions.

The advanced microelectronics project aims to break the one micron barrier for components in integrated circuits. If this can be achieved, eight times as many cells will be packed on to a microchip, with an accompanying 10 times increase in speed and 10 times reduction in power consumption. Databases and CAD systems will have to be re-designed to cope with the resulting massive information handling problems.

The software technology programme is directed at establishing standardised software interfaces, to produce an automated environment, organising and co-ordinating operations in a common database for all specialist teams participating in an industrial soft-

the cost, and the Community will provide the other 50%. The Commission hopes the threat from Japan will bind companies.

The sequence of activity leading up to the Esprit project started in the mid-1970s with a limited number of small scale new technology research projects from 1975-76.

In 1976 the Commission proposed a more comprehensive four-year programme, the Multiannual Informatics Programme, which

All priorities, training and education, standards and pre-competitive research and development, must be addressed now

was to support about 40 small scale technology transfer projects, some research, and policies to ensure standardisation and co-ordination of procurement policies.

However, in the three year gap between conception and implementation, France and Germany had implemented national support schemes and IBM had launched a new range of products. As a result, the programme, when finally approved in 1979, was severely cut back. It received around £8.3 million for the technology transfer projects, instead of £20 million. Many projects were, therefore, stillborn.

The Multiannual Programme is still in progress. This April it received a cash boost to see it through to 1984. A recent progress report reveals that staff shortages have hampered the work on standards, public procurement policies and other studies, but several projects, generated by the Commission, are underway.

These projects include a plan to computerise Europe's ports, a project to develop a computing system for the generation of hydrological models, and a £4 million programme to develop Ada software. Several European companies are participating in the Ada programme, including Cii-Honeywell Bull, Alsys, Siemens, Olivetti, Danish Dataatics Centre and Rovsing, with Camberley-based Systems Designers as a subcontractor.

Other projects include schemes to computerise customs within the Community (Cadeta) and to experiment with high-speed data-transmission techniques (Stella - Satellite Transmission Experiment Linking Laboratories).

The Commission itself publicly acknowledges the failure of the Multiannual Programme to produce concrete achievements, and refers to the 1970s as a "decade of failure" for the Community's data processing policies.

The Commission attributes the failure to national and commercial rivalries: "Collaboration has been negligible, largely frustrated by national ambition and the reluctance of the major IT companies to reveal their industrial plans or research."

Industry blames the slowness of the Community bureaucracy, and Euro MPs, led by Hermann, place most blame on the Council of Ministers for meddling with and delaying the Commission's proposals.

Related to the Multiannual Programme, but funded separately, are two programmes aimed at widening standards as well as providing easier communications within the Community, the Insis programme and Buronet-Diane.

The Insis Programme (Inter-Institutional Integrated Services

Information System) was proposed in 1979 and is just completing pilot phase. Insis was set up to use information technology to link the institutions of the European Community on functional, geographical, cultural and linguistic levels.

Five British companies are taking part in the pilot studies. Most of these are short, lasting about six months and worth about £30,000 each. Butler Cox is carrying out preliminary work into local area networks. Pactel is working on a

route dimension pattern, and White Waghorn software consultancy is identifying the need for file storage and retrieval systems in Community offices.

Langton Information Services has worked on a £180,000 project to examine computerised alternatives to paper documents, and C/S (part of the Yankee Group) and Loughborough based Hust (Human Sciences and Advanced Technology) are involved in the development of office automation feasibility studies.

The planning for the long term Insis programme, which is envisaged as a four year development phase followed by a four year consolidation phase, has been beset with budgetary problems, and although the way has recently been cleared for the next development phase, there is organisational reorganisation taking place, and it is unlikely that the project will get fully underway for another year.

Some work will continue on a low key this year and activities will include electronic mail, preparations for videoconferencing and general human and organisational studies.

Another programme organised by the European Commission was the Buronet-Diane (Direct Information Access Network for Europe). This standardised telecommunications network was implemented three years ago to link technical databases throughout Europe. The number of online databases has risen from 70 in March 1980 to 370 today, and there are now 2,500 users.

D'Avignon took the lead in formulating a co-ordinated research strategy in Microelectronics, and the Microelectronics Programme was proposed in 1979. It took two years to gain approval, and approval was given just one month after Japan announced its fifth generation plans.

The £24 million programme has only this month got underway, with the first of the 10 or so two three year projects being announced last week, a collaborative venture by the Science and Engineering Research Council, GEC, Philips, University College Swansea and Trinity College, Dublin.

The real test of Esprit's success initially will be the speed with which it can gain approval by the Council of Ministers, and the speed with which its budget can be agreed.

Fernand Hermann made the point last week: "It has taken many years to achieve very little at great cost. I mainly blame the Council of Ministers for the delay and changes to programmes so far, and I have drawn attention to the situation in Parliament in the hope that the Esprit project will be run more efficiently."

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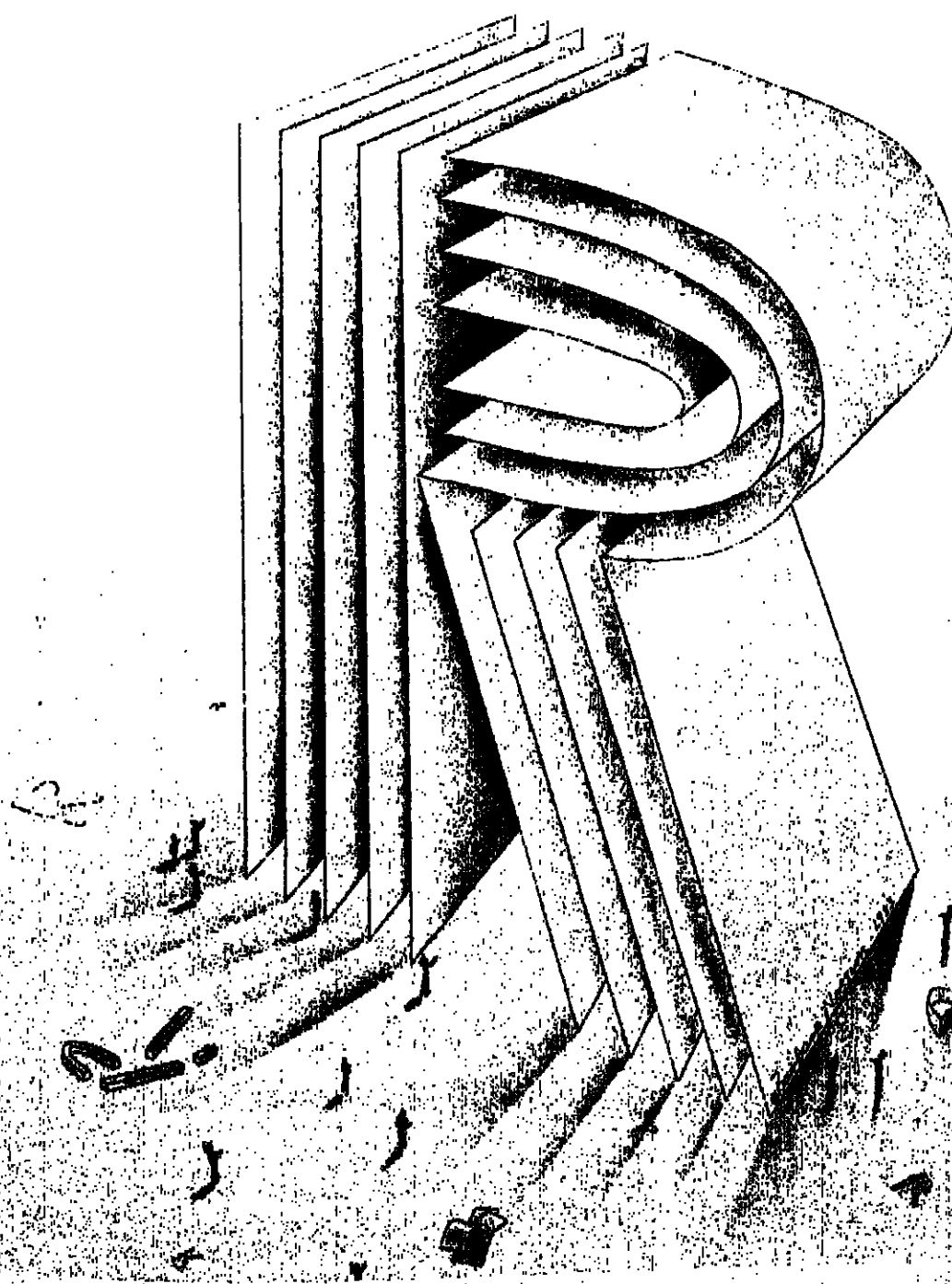
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April 1980

IBM users put on a happy face

THE IBM Computer Users Association is one of the biggest in the country, with 1,000 members from some of the biggest and most prestigious data processing installations.

Each year the CUA holds a large conference which usually draws attendances from up to 50% of the membership.

One object of the annual conference is to bring users together to discuss common problems.

Another objective, less clearly articulated, is to give IBM and the users a forum in which to record their attitude to each other in public.

This year, in the wake of a period which has seen the CUA become increasingly polarised against IBM over the issue of price increases, the main protagonist for the users was John Grant, chairman of the CUA Council and facing him for IBM was Anthony Cleaver, the company's number two manager in the UK. Diplomacy was the mode of the public encounters.

Here's how they looked to *Computer Weekly's* Kevin Cahill.



GRANT... Private angst.

BUNHOMIE was the predominant public face of the IBM Computer Users Association meeting at Luton; but behind the joviality was a private angst which was mostly about prices.

According to CUA chairman John Grant, the association had failed in its representations to either force IBM to delay or recede the regular price increases it has been imposing on its users, particularly over the past few years.

This statement belied the fact that IBM has not yet installed the price increase due on February 1, but as Grant said, no one at IBM was prepared to admit that the CUA had anything to do with this.

Grant told the 450 members attending the annual conference that IBM is now aware that price is a major issue in its installations.

If it is, then Tony Cleaver, IBM's assistant general manager in the UK is not admitting it.

In his speech, which immediately followed Grant's, he managed to totally avoid the price issue, as did all other key IBM speakers.

Many CUA members present were privately highly critical of IBM's failure to deal publicly with what their chairman had identified as their principal concern.

A number of IBM users, particularly in the Midlands, are believed to have withheld payment of last year's increase and a general attitude of private opposition was strongly evident among the members.

Grant conceded that the price had at times proved difficult to handle, which was a diplomatic way of saying that there was a difficult balancing act among the more extreme of his members who wanted to openly flout IBM's increases in public, as opposed to the

Midland group who had merely done so in private, and the less extreme who simply wanted to negotiate with IBM.

While IBM has a specific manager who liaises with the CUA, the relationship between the company and its users is increasingly conducted, certainly at a policy level, by Anthony Cleaver.

This made Cleaver's avoidance of the issue in public, and to a measured extent in private, a matter of concern to most of the attendees.

Cleaver's attitude, which was excused on the grounds that the Press was present, also tended to undermine Grant's claim that the CUA is a strong association.

Where the association has had some response, and where Cleaver was prepared to talk, was on the issue of IBM's billing.

Because of the huge range of products, agreements and pricing positions, an IBM monthly invoice for a large installation can look like a small book.

In response to persistent approaches from the CUA, IBM has accepted a member of the CUA council on to its internal working party, which is looking into the whole question of the way the company bills its customers.

Grant reported that IBM had further extended co-operation on this issue by sending their senior managers to the CUA council to report on progress to date.

While the CUA's man on the working party, Ray Sanders, somewhat gloomily thought that the whole billing system (which is being reviewed by IBM at corporate level) would take several years to overhaul, some changes have already been made by IBM.

The company has dropped its billing of delivery charges as a



CLEAVER... Managed to avoid the price issue.

separate item for each piece of equipment purchased and volume purchase agreements have been standardised.

The maintenance issue is based on the fact that, like a piece of hardware, a piece of software should work when installed.

Initial fixes, especially if they have to be made as a result of shortcomings in the software itself, should be paid for and done by IBM, according to the CUA. Grant was able to confirm some users' worst fears that IBM was giving 3081 users priority for 3380 deliveries.

Although the delivery position on the huge 3380 discs is now much easier than earlier this year, many users are still experiencing six or eight week delays.

Cleaver dropped a number of hints about IBM's future direction as a company.

To a background of the disappearance of almost all delivery delays as IBM brings on stream more and more of the 25 million square feet of new production facilities created over the past few years.

Cleaver told his audience that IBM's goal was to become the low cost developer of the highest quality products in the industry. He added that having achieved that goal IBM also intended to become the low cost developer, seller, and servicer to the DP community.

In private, Cleaver pointed to IBM's willingness to negotiate on price, something that IBM had rarely done in the past.

One item revealed by IBM for the first time was the outcome of its internal survey of customer satisfaction levels.

According to Cleaver the overall customer satisfaction levels rose from 60% at the start of 1981 to a high of 84% at the end of 1982.

Customers line up for a conversation-stopper

"IT is," the man from IBM said, "the end of conversation as we know it." Being the good marketing company that it is, IBM made the CUA conference the scene of a series of detailed presentations about its most exciting products, of which ADS, a voice-based filing system, is one.

ADS digitises voice input from a telephone, stores the voice messages on disc and puts the recall and distribution of the voice input under the control of some very sophisticated software.

It's not cheap, although there are a queue of customers who have been lining up since the initial announcement last year to acquire the product. First in the queue is IBM itself which has adopted ADS for 4,000 of its own staff within the company.

The system is based on a Series 1 computer which can have up to 1,000 telephone lines and from two to eight 64K discs attached. ADS

currently assumes that you have an IBM PABX 1750 or 3750.

Entry level price is from £125,000 per annum.

Ian Stoker, the IBM manager for ADS explained that the company, despite its size, had been unable to create enough interfaces for the myriad of European manufacturers in time for the launch. These would be available in due course, Stoker said.

ADS has a massive range of detailed functions operated from a small calculator sized keypad which comes complete with audio coupler.

A caller can store, recall, check and amend calls, all in voice mode. Calls can be set up in advance and scheduled for despatch to selected recipients.

A user can call in and check the status of calls which should have been despatched to see whether they have been sent and then received by the sender.

Video-based storage on the way from Marconi

MARCONI will shortly announce a video tape-based data storage system developed in conjunction with Professor Gareth Hunt of Imperial College. Dr Hunt, a DEC user, explained to the IBM CUA conference that his team at Imperial College had developed the image storage system as part of the NASA space programme.

The Imperial College Group, based in the Department of Atmospheric Sciences, acted as the collector of the data being transmitted back by the Mariner space craft. The data arrived on earth at a rate of about 118 Kbytes per second, and contained up to 70 images in each second's transmission.

The raw image data was stored on video discs, but the huge volumes of data transmitted back to earth over the past three years by the space craft were stored for convenience on video tape.

But most of the processing of the data is carried out by the black

box designed by Dr Hunt's team.

It is this black box, attachable to more or less any video tape system, which Marconi will be marketing.

At the end of his presentation, Dr Hunt expressed himself deeply disappointed with the new-built lectureships just created by the government. He noted that none of the lectureships were in basic physics or VLSI, two key areas in the Japanese fifth generation project.

He will never now compete with Japan in the next computer generation," he said. Dr Hunt said that he had much earlier advised ICL to get out of the big mainframe area and get into the Vax market place.

To some extent ICL has done this with the ME29, but the handling for a mainframe position continues with the marketing right at the top end of the mainframe business of the Fujitsu 380 known as the Atlas 10.

New look for Alpha Micro

by Robert Parry
US MICRO manufacturer Alpha Micro is out to change its image. It has opened up its own UK subsidiary, Alpha Microsystems (Great Britain), to beef up its presence in the UK market, and is gearing up to put a new face on its multi-user micro product line.

The machines will be redesigned, with continuity maintained, and given catchy names rather than the present numbers. The company is also planning to move away from being just a supplier of processors; it is branching out into peripherals and more application oriented systems for word processing, spreadsheets and CP/M users.

"At the moment Alpha Micro users are very much a club," says director of sales Barry Dearborn, "and clubs just won't survive. People are looking to see a presence in the market place. The new moves show a commitment to the market."

Another means to get away from the club atmosphere and be seen to be active is through licensing deals with Alpha Micro's proprietary multi-user operating system, AMOS. Major manufacturers of 68000-based machines will be taking out third party licences to implement AMOS on their machines, says Dearborn.

AMOS grew out of DEC's PDP-10 operating system, Dearborn adds, and is very space-efficient, taking only 48K of memory.

The UK operation has been established in Slough mainly to keep closer contact with the UK dealers and customers.

Govt plugs for office automation 'ineffective'

by John Kavanagh
GOVERNMENT awareness campaigns on office automation are having a "disappointing" impact - but despite this UK firms are starting to get their automation strategies together.

This conclusion emerges from a report on the electronic office from the independent research body the Policy Studies Institute. But the report also shows that companies are still sceptical about the benefits even of word processors and are sticking with typewriters.

The study report says only one in three of the companies surveyed were aware of the Department of Industry's office automation promotion campaign, which involves full funding of projects across the country. This is "somewhat disappointing", says the report, as the companies, all known to have some commitment to office automation, would be expected to be better informed than most.

The government's Information Technology Year in 1982 made even less impact. Its aim was to increase public awareness of information technology. Yet only 6% of the sample said IT82 had made a significant impact on them and less than a third said it had a minimal impact. Almost 60% said it had made no impact at all - and many said they had not even heard of the campaign.

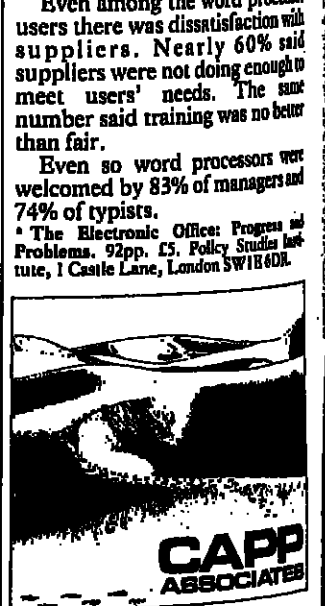
However, two-thirds of the companies were using word processors. A third were buying them as standalone products but another third saw them as the first step towards complete office automation systems. The rest were evaluating the effect of their first word processors before deciding whether to go for integrated electronic office systems.

But among firms not using word processors a quarter were not convinced of the benefits and another quarter said they were too expensive. A third said typewriters were adequate and their work was not suitable for word processing.

Even among the word processor users there was dissatisfaction with suppliers. Nearly 60% said suppliers were not doing enough to meet users' needs. The same number said training was not better than fair.

Even so word processors were welcomed by 83% of managers and 74% of typists.

The Electronic Office Progress and Problems Study, Policy Studies Institute, 1 Cassle Lane, London SW18 8LW.



Feather in their CAPP

ABOVE is the pictorial lure used by CAPP Associates in its award-winning advertisement for multi-frame computer field engineers in Saudi Arabia. The full advertisement, headed "The challenge there, finding a fault and putting it right", was awarded one of the *Daily Express's* annual certificates of merit last month.

Advertisements placed by CAPP Associates, Croydon based recruitment consultants, were given certificates of merit in three categories. CAPP has no association with CAP (Computer Analysis and Programming), a statement made recently in last week's issue.

SOFTWARE FILE

Experts ask how to communicate

SYSTEMS experts met last week at a elegantly-restored medieval priory to talk about the office of the future.

The best brains of the country's computer departments are now turning their attention away from the questions of "which machine?" and "what programs?" to "how do we communicate with each other?"

And a group of them, representing 23 large organisations, went to a meeting for users of the American product HOST, held by its British distributor Shubrooks.

Set up eight years ago by ex-Univac analysts/programmers Paul Shubrook and Geoff Knott, this 23-strong software house moved in 1980 from Windsor to Almersbury at Lyne, near Chertsey in Surrey.

Although Shubrook was attracted to the place both as a property investment and as a pleasant haven for technical staff, his thoughts were directed to the future, rather than the past. He sought a product that would offer more than IBM's PROFS and found one written by Jay Chang,

of National Business Systems, Connecticut.

An electronic engineer who worked for RCA and Univac, Chang went into business with a team of seven in 1980 to promote HOST. Since then he has generated a turnover of \$250,000 from nine US customers and is negotiating distributorships in various parts of the world.

First UK site was the GLC a year ago, which has aroused the interest of many other potential clients. GLC staff used to make 300 internal phone calls a day - now they send 500 electronic notes. A council office was said to save one man-hour a day just through better diary management.

Among those at the evaluation stage are Cadbury Schweppes, Babcock Power, BASF, Canon, GEC, Tesco, ICI and a number of local authorities and public sector bodies.

Peter Monk, technical strategy consultant for Commercial Union Assurance, spoke of the need for evolution, not revolution. CU has 50 registered users on its IBM3081 running with CICS under MVS.

"We don't understand all the ramifications ourselves, so we can't expect the users to," he said. He saw HOST as a way of replacing tedious train journeys with electronic meetings.

Commercial Union, with a head office about to be decentralised around the south of England and about 30 branches nationwide, sees a pressing need to commit itself to an office support system, even though the benefits may be at present unquantifiable.

Canon has 125 users on its IBM 4341-based HOST and chose it in preference to Canon's own FAX system for some jobs.

Paul Dawkins, project controller for GEC Telecommunications, said they were testing HOST on an IBM 3081. They too were reacting to internal pressures to create an electronic office.

"None of us in the computer department had a very clear idea of what was involved. We wanted a suitable product in quickly to give us hands-on experience" HOST had been "very intelligently thought-out," he said.

Mumps and Unix combine

A PORTABLE version of the Mumps high-level language that will run concurrently with the Unix operating system is to be demonstrated in San Francisco at the end of May.

The combination of Mumps, which was developed for medical applications, and the multi-user operation system, has been created by Microtechnics Design Corporation of Washington.

The US Mumps user group will be the first to see it in action. It is expected to be brought to this country in the third quarter of the year by Computer Design Systems of Manchester, which has negotiated the European marketing rights.

The system supports a new portable version of Mumps written in C language and is to be demonstrated in conjunction with the Uni-

market on its Professional machine. A design by Structured Data Systems replaces DEC's own single-user POS operating system in a multi-terminal system with a word processing application overlaid.

It was demonstrated to a recent UK user group meeting, attended by about 100 people, including representatives of many major companies. Shared Medical Systems Europe, is engaged on work to link micros and minis in the medical field.

Southwest Technical Products of Peterborough is promoting a micro system for around £10,000 which it claims to be equal in speed to a DEC PDP11/34 version for between £30,000 and £40,000.

Among others who are known to be aboard the Mumps badwagon are ACT, H&RD of Birmingham and British Medical Data Systems.

Micro Scope expands its caring side

by Nuala Moran
MAIDENHEAD systems builder Micro Scope has launched a micro-based administration system for nursing homes.

Known as Micro Care, the system runs on the PSI-80 computer from Kontron, a Hoffman Roche subsidiary. The cost of the system is £4,500, but it can also be leased for £360 a quarter over three years.

Micro Care covers all aspects of running a home from patient care to financial analyses. It includes patient records, drug lists, accounts, staff records and payroll.

The system, designed for use by people without computer experience, was developed in collaboration with Brian Jupp who runs the 40-bed Brimmar nursing home in Worthing.

He has been using Micro Care for eight months. He says it saves him a week in administration time and has cut the account bill by 50%.

Paperwork has also been cut down for nursing staff.

For example, the system provides a print-out of each of four daily drug rounds. If the drug regime is changed it is easy for the



JUPP... Says systems saves time.

senior nurse to amend the data and get a new print out.

It is still necessary by law to keep a written record but the system is cleaner because there are fewer crossings-out.

"This time saving on paper

work has freed the nurses to get back to the bedside," said Jupp.

A specialist health care systems division, Micro Scope Medical, has been formed within Micro Scope to develop and market

Software File is compiled by George Black

IBM aid comes to market

PROCMAN, the Tone Software Corporation's aid for the IBM Command List (CLIST) compiler is to be marketed by the European Software Company (ESC).

CLIST's performance has been criticised by IBM users working in the TSO environment and some sites are said to have handed it altogether because of its heavy demand on resources.

ESC, an arm of Boole and Babbage, thinks that Procman is the answer to the problem.

Sick system

MICROSSP, Computer Management Group's statutory sick pay system, is to be marketed by the local authorities management services and computer committee LAMSAC.

Under a new agreement LAMSAC has acquired the rights to sell the system, based on ICL's personal computer and its DRS-20, to more than 500 local government bodies.

MicroSSP runs independently but can be linked to payroll and personnel systems on ICL or IBM mainframes.

Finance forum

A SECOND finance forum for software houses is to be held in Manchester on May 26, following the success of the one in London in January.

Organised by the Computing Services Association, it will take place at the Piccadilly Hotel. Chairman of the Software Products Scheme advisory committee Brian Cuddy said there would be about 14 banking companies there.

At the London event 135 software firms were represented, in search of sums from £50,000 to £400,000.

Euro network

DATALOG Management Systems, the Hampshire software house, is setting up a European dealer network for its Data Processing System (DPS) for Burroughs users.

Datalog now has 36 users worldwide. David Wilk, the company's managing director, is predicting a 200% increase in turnover for 1983 from £750,000 to £2,250,000.

Win an Osborne

ASHTON-TATE, US developer of the successful database management system dBase II, is to hold a competition for the best applications available to run on its software. Three prizes: Osborne portables, for the most sold up to March 1983, the highest commercial potential and the most novel application.



JOICE... Keeps his job as managing director.

Altergo Ireland stays the same

AS the dust settled this week over the defunct Altergo empire, Cord Investments said it intended to go on running the Irish subsidiary as if nothing had ever happened to its parent.

Niall Duggan, director of Cord Investments, which has taken a 60% controlling interest in Altergo Ireland Ltd, said: "This company has never been in receivership, has been quite profitable and so we don't think any changes are warranted here."

The firm will retain David Joyce as managing director. The other 40% of its shares are still held by Altergo Ireland directors, believed to include Dick Jones and Raj Thomas.

It is planned that Cord will have two or three seats on the reconstructed board, but talks on who does what are still going on. Cord Investments, parent of Cord Designs in Staines, has ensured jobs for some 70 former Altergo employees.

Duggan said Altergo Ireland, which would continue to run under its old name, had been attractive to them mainly for its Middle East connections and its training facilities. The firm has a £1.25m contract for the United Arab Shipping Company.

Altergo's old Soho headquarters has now been shut down by the receivers, Ipe Jacob and Maurice Withall, of chartered accountants Thornton Baker.

Cord Designs bought real time technical systems house Zeus Hermes from the Enterprise Systems Group in February. Enterprise, which had owned it for less than a year, decided it did not have the resources to develop the company adequately.

The group of Altergo Business Systems men who left to set up their own firm Bluebird Software, are now marketing an IBM System-34 based application developed by PCB, of Chicago, the Easyplan-11 modelling system.

TEK INFORMATION DISPLAY DIVISION

4100 series application Seminars.

To find out more about the new 4100 series range of low cost colour graphics terminals and the application of a technical graphics, you should attend one of the forthcoming Free seminars. These are being held around the UK in the coming weeks. The programme is as follows:-

Harpenden (for Northern Home Counties)	31st May
City of London	1st June
Maidenhead	2nd June
Birmingham	14th June
Manchester	15th June
Newcastle upon Tyne	16th June
Edinburgh	21st June
Aberdeen	22nd June

At all locations two seminars will be presented: Morning Presentation Graphing, Afternoon Technical Graphing. Keynote speakers from the major software package suppliers will outline the use of colour graphics in business and technical graphing applications. To receive a registration card and more information about these events, please contact: Tektronix UK Limited

Tektronix UK Limited
PO Box 89, Harpenden, Herts. AL5 4UP
Tel. Harpenden 63141. Telex: 25559
Maidenhead 73211. Harpenden 63141
Livingston 32766. Manchester 428 0799
Dublin 650168/68764

Tektronix
COMMITTEE TO EXCELLENCE

Inmos gets no-strike deal with union

by John Kavanagh
INMOS has assured itself of trouble-free industrial relations by signing a sole recognition agreement with the moderate BEPTU electronics union. Whatever the state-owned electronics firm's financial problems it will not be hit by strikes, go-slows or any other industrial action.

The agreement covers about 70% of the 250 staff at Inmos's factory in Newport, South Wales. It was signed at top management level by managing director Dr Iain Barron and Eric Hammond, who has been elected to take over

as general secretary from Frank Chapple.

The agreement says the arbitration service ACAS would be called in to resolve any dispute. ACAS would be asked to decide a dispute in favour of the management or the union - and both sides would accept its decision as binding.

The clause that removes the danger of strikes reads: "There is explicit understanding that the agreement provides alternative methods for resolving the issues than the traditional recourse to industrial action of any kind."

Inmos does not have a closed shop. A spokesman said staff would still be able to join - or not join - any union. The BEPTU could represent any staff, including clerical people. It would not cover senior professional staff.

Inmos said it talked to several unions before making this deal and all accepted the sole recognition policy, which was recommended by the Wales TUC. "South Wales has long been one of the strongest areas of trade union membership so it was appropriate to follow the TUC guidelines," the company said.

"We chose the BEPTU because we already have a very good relationship and it is the most appropriate union for our staff."

The BEPTU said it backed Inmos' "highly innovative" approach to labour relations. The company puts great emphasis on two-way communication with staff through local and company advisory councils, made up of elected members from staff and management.

All staff have the same rights and employment conditions and individuals get annual appraisals.

MARK WEINBERG'S SUNDAY TIMES

By the time he was thirty, Mark Weinberg had created Abbey Life. Today, as the founder of Hambro Life, he has been responsible for revolutionising life assurance in this country.



After a highly organised week in town, we have a completely unstructured Sunday. It's a day for sleeping late and messing around on our farm. I like to

get a couple of sets of tennis and some riding in if I can but mostly I just potter around and take the opportunity to spend an hour or two with the children, of whom I don't see enough during the week.

Our farm is managed by a neighbouring farmer so I always have a chat with him in the morning discussing how things are going and I also spend some time with Edgar who looks after the vegetable garden and our wild ducks. He loves the country and has never lived more than a mile from his present home, so it's nice to have half an hour with him, seeing the countryside through his eyes.

But the day starts with the papers. We get up fairly late so one of the disadvantages of living in the country – not getting the papers delivered till 9.30 – doesn't really bother us. We're unlikely to be up by then, and we lie in bed reading them for about 45 minutes.

The beauty of Sunday is the chance to get heavily into the papers and catch up on what one missed in the week. On weekdays there's a certain amount of reading I have to get done each day and after that I read the papers more or less according to chance. But Sunday I can pay much more attention to them, reading the news and features in greater depth and also devoting time to the arts and leisure sections.

With The Sunday Times I start with page one and then turn straight to the business section – even on Sunday it's a bit of an obsession. Then I try to go from page two through to the centre spread fairly fast, picking out stories I particularly want to read before I get distracted. But the little news features

before the centre spread always seem to pull me in and thwart my attempt to get an overview. There's always a couple on science or medicine that I find especially interesting.

The thing I like about the centre spread is the way the main issue of the week is developed in different ways, partly in the leader, partly in the article on the opposing page and sometimes in another comment piece as well. It seems to pull it all together somehow.

We don't go out on a Sunday but we quite regularly have people round for lunch, which is seldom before 1.45 and often as late as 2.15. I usually manage to snatch another 15 minutes' reading time just before lunch.

One of our other interests on the farm is our wild ducks which live round a bit of water near the house. We've wired in the area against foxes and in the last couple of years I have been trying to introduce a wider variety of fowl. We've got about 25 types now and have succeeded in breeding from a number of them.

I tend to treat the main newspaper and the business section as a separate paper from the rest. I'll pick up the review and colour supplement after lunch or settle back with them in the late afternoon or evening. I often read the main piece in the review in a concentrated session in the evening.

I very much enjoy the supplement and think it contributes a lot to Sunday. I appreciate the quality of photography which is a great contrast to the nasty, flimsy feel of the traditional American colour supplement.

I must be an advertising manager's dream as I also have a soft spot for the ads and read the supplement as much for them as for the editorial. This makes me a menace as far as my secretary is concerned because I'm likely to come into the office on a Monday morning with three or

four coupons I've cut out and ask her to send off for the products.

On Sunday evening I start to change gear, worrying about the week ahead and thinking that if I don't organise for Monday morning I'll be in a mess.

There's really no chance that I'll have read everything I wanted to read in The Sunday Times so I keep it for the rest of the week – the trouble is that the next Sunday usually arrives before I've finished it.

In a recent survey by the New Business Research Consortium, several interesting facts emerged:

◆ The Sunday Times is read by more businessmen than any other newspaper.

◆ The Sunday Times is the only quality Sunday to have increased its businessmen's readership since 1980.

◆ The Sunday Times has market leadership in most of the important occupational areas, including: marketing, 43.5%; computing, 32.5%; finance and accounting, 38.5%.

◆ The Sunday Times has more readers in all the following categories: top income bracket, 51%; 2-car families, 36%; credit card ownership, 35%; value of shares £10,000+, 53%.

Almost every indicator showed The Sunday Times to be the top paper for business men and women.

For more information about display advertising, phone Mike Ruda, Advertisement Director, Times

SUNDAY TIMES MAGAZINE Newspapers 01-837 1234.



More businessmen read The Sunday Times than any other newspaper.

THE SUNDAY TIMES

Old stereos bring down store costs

THE END

PROFILE



HAUER... "People demand to know more and more."

Visionary who thought programs had value

HALF of the computer systems sold in 1990 will be supplied by value-added dealers, according to Informatics chairman Dr Walter Bauer.

"Value-added dealers" is his way of combining software houses and systems houses which enhance hardware and give the customer what he wants.

"More and more machine manufacturers are going to sell their machines to people like us. They aren't going to need those big sales forces to visit the users any more. It's who are going to need the sales people," says Bauer. Bauer is considered within his Californian company and beyond as one of the industry's visionaries. His claim to this title rests on having founded a software company in 1962 when there were only two or three others in existence.

He had to persuade the world that programs had an economic value in themselves – and many people thought he was crazy.

But he had been in computing since it began, and was sure he was right. In the early Fifties, when he was a research engineer, there were only five computers in the world. One he worked on at that

time was the MIDAC in his native Michigan. "They said it stood for 'Machine Is Down Almost Continuously'."

The first machines he worked on were pretty vast – but about a thousand times less powerful than the IBM Personal Computer he now keeps at his bedside. Most of the work was in machine code as there were still no compilers for high level languages.

He gained his business management experience at the Ramo Woodbridge corporation, suppliers to the American defence department. From Ramo, Richard Hill and Werner Frank went with him to set up Informatics.

by George Black

"The others that already existed, such as Computer Sciences, were offering professional services. Our idea was quite different and new. It was to sell products. People doubted whether this could be done because they thought there could not possibly be any common denominator between one computer user and another. We showed them wrong."

Bauer, Hill and Frank became directors of a \$4 million concern with great hopes and potential, but still only a shaky basis in the products business. Success came with the development of the Mark 4 productivity tool, probably the first software product to make a name for itself independently of hardware.

From there they went on to develop applications such as general ledger packages. They diversified through the acquisitions trail, buying up some 25 smaller companies over the next 15 years.

Vertical markets are the biggest expansion area of the near future, says Bauer.

Bauer is now 58 and in February passed over the day-to-day running of his \$170 million empire to Bruce Coleman, who is 43. Coleman becomes president, while Bauer will concentrate on planning long-term strategy behind the scenes.

"I'm aware that men are mortal and I must retire sometime, but I have no plans to do so."

"Why not? Because I am still enjoying it. And because computer services are still really in their very early days."

PLATFORM

Competition—the catalyst in good communications

COMMUNICATIONS technology is changing so rapidly that many nations may find it advantageous to liberalise supply policies to provide their citizens with the newest equipment and services.

As technologies continue to converge, as did computers and telecommunications in the recent past, there will be benefits to opening borders to competition. The alternative would be to increase monopoly coverage each time a new development, such as cellular radio or packet switching, appears. This would be a costly approach.

Because of this, some nations might find it worthwhile to follow the leads of the US in deregulating its telecommunications industry and of the UK in liberalising its equipment supply.

There is much interest throughout the world in the American deregulation process. We perceive this interest among the numerous visitors from other countries who come to our manufacturing facilities and telephone companies each year.

Almost all of them have a lively interest in deregulation. Since we believe in competition in communications, we take this interest as an encouraging sign.

No wonder there is interest. Look, for example, at what is happening just in the demand for the telephone itself. In the US, it is predicted that sales of telephones will soon replace stereos, home computers and video-cassette recorders as the fastest growing consumer electronic product.

There are forecasts that new phone sales will reach 10 million this year, more than double the 1982 figure.

Many people are fascinated by the deregulation of the US telecommunications industry because they believe it was an overnight phenomenon. But it was not, and that is important to remember.

The second thing to be aware of is that, to a great extent, technological advancements helped bring about deregulation.

It is ironic that what is consid-

ered the first, hesitant step taken on the road to deregulation in the US involved the use of a very sophisticated non-electric device called the Hush-A-Phone. This simple gadget was attached to the mouthpiece of a telephone to allow its users to speak into the instrument more privately.

The 1956 decision by the Federal Communications Commission to permit the use of a Hush-A-Phone marked the first time that a non-telephone device had been approved for attachment to telephone company equipment.

A quarter of a century elapsed between the Hush-A-Phone ruling in 1956 and the settlement of the Justice Department's anti-trust suit against AT&T in 1982. What happened between those two events was a steady flow of

Theodore F. Brophy is chairman and chief executive of GTE Corporation

liberalising decisions by the FCC and the courts, most of which involved the use of new customer products or services.

All this took a very long time. Deregulation was not born overnight. It took hearings and court suits and debates and much soul-searching. And I hope that what we went through will be studied, and that this will shorten the process elsewhere.

Will the majority of the world's nations choose to go the way the US has?

I hope they do. For I fear that if they don't many countries will be unable adequately to supply their citizens with state-of-the-art telecommunications services and products.

That is because the world of communications has changed drastically and permanently. Throughout most of the history of technology, technology moved at a slow, steady pace, but nothing occurred which basically altered the way we communicated.

Then, as telephony's first century was drawing to a close, there was an explosion of developments.

New technologies, new systems and new techniques began pouring out of research and development facilities... satellite communications, solid-state electronics, electronic switching, optical transmission, integrated circuits, digital technology, and, later, packet switching.

In the future, changes will come faster and cost more. Research and development expenditures are skyrocketing. We at GTE have 3,000 scientists and engineers working on company-sponsored research and development projects. In 1983 our research budget will be in the hundreds of millions of dollars and most of this will be devoted to technology.

The proliferation of commu-

nications technology, products and systems will proceed at an accelerated pace for as far as we can see in the future. Information-based societies around the globe will demand what is current, what is best. In countries that traditionally have had problems in supplying their citizens with adequate communications, competition can be the catalyst in providing these services on a cost-efficient basis.

I know liberalisation will not come quickly. But there are some hopeful signs around the world, in such places as Canada, Australia and Ireland.

And competition has been the subject of an encouraging report issued last year by the International Chamber of Commerce.

None of this, admittedly, has brought about any widespread action. But at least the subject is being discussed and it will continue to be discussed.

Liberalisation will be a dominant factor in communications during the rest of this decade.

Theodore F. Brophy

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, May 5, 1983

Half an Alvey is better than none

THE Alvey Committee recommendations for an advanced information technology programme have at last been accepted. And if in the end the government slightly hedged its bets, there is now at least a framework to build upon.

The most serious immediate concern is that there is apparently no new money. The £200 million governmental contribution will come from existing allocations, which leaves one with the suspicion that it is a case of robbing Peter to pay Paul.

We shall need to look closely at how the funding works in practice.

But at least we are in with a chance against the Japanese, the Americans and the French.

And we welcome, too, the choice of Brian Oakley of the Science and Engineering Research Council as top man in the project's directorate. He is well-respected in the industry and deserves every support in making the scheme a success.

We hope that those he invites to participate in its direction will respond to the challenge, and put national loyalty above company loyalty – or at least on a par with it.

They should not hang back and wait until after the next general election before committing themselves. It is unlikely that the next administration, whatever colour it may be made of, will have such radically different views on information technology to reverse or divert the course of the Alvey programme.

There are few who doubt that we have the brains in this country to compete successfully in the international high-technology arena. The doubts surround our financial, managerial and selling skills.

Oakley's massive task will be to orchestrate these and allay the fears expressed both by Alvey's team and by industry leaders since the report was published that laboratory triumphs may never reach the marketplace.

Oakley, starting with one hand tied behind his back, deserves our sympathy. The 50% support limit will, as he himself has pointed out, make the struggle to win the commitment of smaller firms more difficult.

The government's decision to restrict its backing in this way was wrong, and the reasons it gave for doing so were altogether unconvincing.

The argument that heavily subsidised schemes necessarily mean a lack of industrial commitment is no more than a doctrinaire generalisation.

It is to be hoped that the government – or its successor – will not now sit back and claim that it has fulfilled all its obligations to the future of computing.

It should stand ready to modify the plan in any way that Oakley and his colleagues suggest – particularly if it turns out that the response from the smaller, but vital software houses is inadequate.

The whole object of the exercise will be thwarted if there is not unity of purpose and a sensible division of labour with a common goal.

The Cabinet should be flexible enough to go back on its initial stance and increase the grants to 90% if that becomes essential. The question is too important to be decided by a once-for-all, "no U-turns" policy.

Industry secretary Patrick Jenkin did state that the directors of the Alvey programme could ask for additional grants to fund new developments. We trust the government will stand by this.

The facts of the case are still that the Japanese, Americans and French are spending far more than we are in this area and that their programmes are far more tightly and centrally directed.

It is time British governments began to look ahead more than the next 12 months and think of their children's careers as well as their own.

But we must go into the Alvey programme optimistically. Faith that we can do it is half the battle. And we owe thanks to Kenneth Baker and Patrick Jenkin for battling on the industry's behalf, even if they did not quite get all we needed.

1984 and all that...

THIS week's example of the strange things people say about computers was sent in by Melvyn Booker of Reading, Berks, who is now possible to prove that a computer program meets its specification.

New Scientist

LETTERS

Lesson of Altergo

WHILE it is very easy to be sympathetic with the staff of Altergo in their plight of potential unemployment, it is very annoying to companies such as mine, and I am sure to other successful software organisations, to read in some sectors of the Press references to Altergo being "the UK's leading IBM-based software house" and "one of the UK's most successful software houses."

The fact is that at the end of the day Altergo was a badly managed business.

The main qualifications that customers of such organisations look for are quality of product and a reasonable guarantee of level and continuity of service, these depend very much on the price charged for them, the corollary being that charging less than the correct price leads to the products and services disappearing.

I am pleased to say that CMG is not noted for being inexpensive; we also have a considerable base of IBM customers and believe that we will have the largest number of entries this in the famous IBM "Red Book" of non-IBM software. Most importantly we consistently make money.

Let us all, customers and suppliers alike, learn the lesson of Altergo.

R. J. WHITE

Director

CMG

Croydon.

Software fortunes

YOUR article, "Staff quit Software AG" (Computer Weekly, April 21) leaves the impression that Software AG of Darmstadt, West Germany, and Adabas Software Limited of Derby are under the control of Software AG of North America (of Reston, Virginia), and therefore reflect its financial fortunes.

This is not the case. Adabas Software Limited is a subsidiary of Software AG (Darmstadt), and both these companies make substantial profits. ASL, in fact, has doubled its staff and customer base in the last three years, has established its own fully-equipped computer centre and training centre, and is still expanding. Incidentally, Derby staff currently number two dozen rather than one dozen and British installations now number more than 50, many of them "household names". ASL is also increasingly called upon to contribute to the continuing development of products such as the high level language Natural – which, like the Adabas database system, is a European product of West German origin.

M. F. HOLLIS

Company Secretary

Adabas Software Ltd

Ferby.

Useless

AS the owner of one of the arguably best microcomputers available today, Acorn's BBC Model B, I am compelled to comment on J. P. Bennett's letter (Computer Weekly, April 14), regarding Forth.

I have purchased the Acornsoft Forth system for three reasons. The first is that Forth meets most of my requirements for a high level language compiler to complement Assembler; the second is that there is presently no alternative (where has Pascal gone?); and last, but not least, all the Acornsoft software I have seen to date has been of a uniformly high standard.

Unfortunately I cannot use the system because the "accompanying book" has not yet been published. When last I spoke to Acornsoft on the telephone I was informed that it might be available by June. In the meantime I am left with a useless cassette and Acorn is left with my money in its bank account.

P. HILLIER-BROOK

Workingham, Berks.

Computer brainwave

WITH reference to the item (Computer Weekly, April 21), reporting the suggestion by a US commentator that one day soon direct brainwave input to computers would be possible, those readers who (fondly) remember *Computer Design* may just recall my letter of July 11 1974 to that iconoclastic organ in which I mentioned in passing "direct neural plug-compatibility... a phrase which I have favoured ever since for this (still not quite here) facility..."

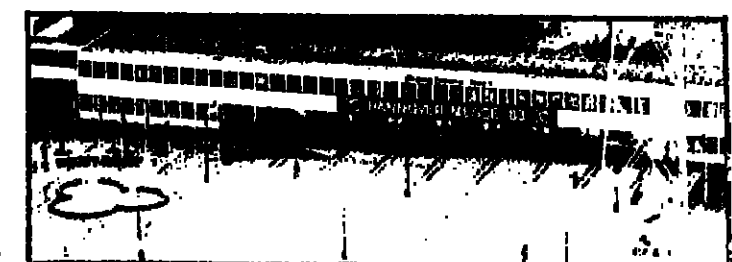
The full text of that earlier letter, incidentally, may bear repetition today: "A new word has just struck me: with the increasing trend towards microprogrammability, hard-wired software should become as flexible as the more usual sort. Every software writer will one day pass his 'program' on to a punch girl sitting at her program burner (if he hasn't already got direct neural plug-compatibility by then!). I thus propose SOFTWARE for this new emergence – if it hasn't been thought of already..."

Dr STEPHEN CASTELL

Computer and Systems

Telecommunications

Witham, Essex.



HANOVER... "The most important of trade fairs."

UK's Hanover apathy

WE read with interest your editorial (Computer Weekly, April 21), regarding the poor attendance of UK companies at Hanover Fair.

The failure of a great number of British computer companies to be at that most important of trade fairs must point to the lack of interest in setting up and doing business outside the UK itself. Indeed, generating enthusiasm and orders at Hanover could create problems of delivery and subsequent service needs where there is no presence in Continental Europe.

Though not denying the success of many British companies "abroad", there would still seem to be a reluctance to attack overseas markets.

Language may be a problem

though you do not have to be an IBM to recognise the need for local management who speak the language of any particular country. Even here, in the Netherlands, where nearly everyone speaks English, they prefer to do business and receive documentation in Dutch.

Finally, it may not be the total lack of desire to exhibit or sell outside Britain but a lack of knowledge (market and organisational), aggressiveness and commitment to succeed. Commitment is what is needed above all.

SIMON LEVER

Partner

Recruitment Partners

's-Gravenhage

Holland.

Payment for IDMS

IS it not time that the services sector within data processing and information technology reminded itself that, if we are to be accepted as a professional body of people, we must act like one.

I refer specifically to your article "Willnot Reject" (Computer Weekly, April 21) where straightforward reporting of facts seems to have given way to fantasy, as instanced by the statement "Midast-29 users obtain their data based manager IDMS free".

The fact is that parts of IDMS which have been embedded into the product is free; anyone wishing to use IDMS generally will, however, have to purchase it like any other user.

I leave it to ICL to comment on Systemsolve's "insight" as reported, but I would like to correct the impressions given with regard

to Ordermaster, the order processing package that Pentagon Business systems now markets. Ordermaster/Autras was designed for and is successfully running on ME29, 2900 and 1900 mainframes under TME and DMO operating systems.

The reason ICL devolved Ordermaster was as part of the same product rationalisation plans that gave Systemsolve its package.

Finally, if Systemsolve wishes to make public a comparison between Ordermaster, its support services and Midas, we would welcome an independent evaluation and are happy now to agree to your publishing the results of such an evaluation.

C. E. CUSHNIE

Managing director

Pentagon

London NW1.

Esperanto for Europe

IN your article, "The trouble with storing words in a messy language" (Computer Weekly, April 7), Joe Celko makes the point that "the only totally regular language is Esperanto. It is the only language that is easy to implement on a computer."

The Esperanto Centre in London has recently published a report, "Esperanto and Machine Translation", written by Ian Kelly, who is (or was) chairman of the British Computer Society's Natural Language Translation Group.

And Danish electronics company Christian Tøvsing and a Dutch consultancy company DSO have won a major development contract from the Commission for the European Communities which may ease the Community's £55 million per year language problem.

The system will translate to and from eight Community languages, using Esperanto as the intermediary, ie each language will be translated first into Esperanto.

GRAHAME LEON-SMITH

Honorary president

Esperanto Association of Britain

London W11.

Full marks

WELL done Computer Weekly for giving some prominence to the achievements of optical mark readers in William Brown's piece on computerised examination results (April 14). One scene of the technique's capacity for high volume, high peak data entry is the rapidly expanding overseas education sector, in such regions as West Africa.

The West African Examination Council, which uses three of our OMR systems, processes no less than seven million examination papers in the space of a few months.

RAOUL WYNN

Commercial director

Data and Research Services

Milton Keynes.

Popular systems

IN an article, "IBM sets out its Personal policy" (Computer Weekly, January 28), there is a misleading statement regarding the popularity of the available operating systems.

An independent survey has shown that 96.3% of all 8088 and 8086-based computers run the MS-DOS operating system (called DOS by IBM) while slightly under 3% run the CP/M-86 operating system. Current estimates indicate that there are approximately 400,000 of these computers, giving MS-DOS 385,000 users, and leaving CP/M-86 with approximately 12,000 users.

CARL STORK

Manager, European Business

Development

Microsoft

Washington, US.

DOWNTIME

Who's been cribbing?

SPOT the April fool story this year then? Doubt it, unless you've been looking in my top right hand drawer. One of our funsters put together a spoof about ICL developing the 3900 series, which features input and output by thought waves.

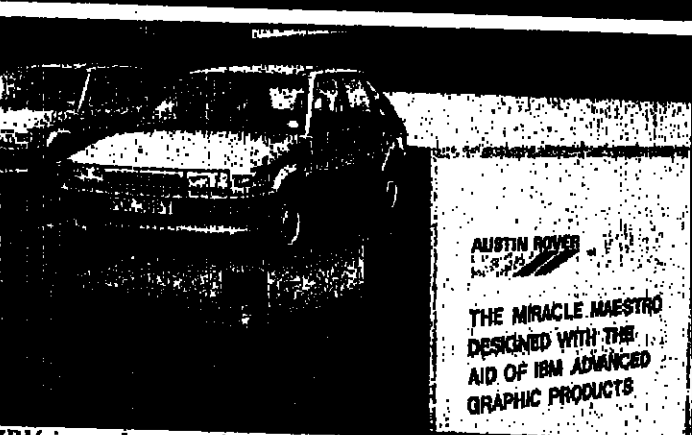
But being a sensible publication, we didn't actually print it.

Imagine then our surprise when we discovered, only three weeks later, that a learned professor from the University of California was promoting just such an idea at a conference in Bristol.

Perhaps the professor had been rooting around in my top right hand drawer.

10 YEARS AGO

FROM COMPUTER WEEKLY OF MAY 3, 1973: Access to expertise which had gone into development of the ARPANET would be available to Europe following an agreement between Logica and its European associates BESA, with Doli, Bernack and Newman... ICL chief Geoffrey Cross announced that the 2903 small business system would spearhead ICL's attack on the European market.



IBM is proud to announce its connection with the whimsical new BL car, the Maestro.

The connection comes in the shape of the computer aided design system used to pin the thing together. The Austin Rover Group (it says here) used IBM computers to define, manipulate and store the master geometry database defining the complete body surface of the car.

Shame they didn't design the washrooms at the Cowley plant as well.

by Don



McNulty is back

WITH the slogan "Mac is back", John McNulty, a leading telecommunications entrepreneur notorious for his publicity stunts and sustained campaigns against British Telecom's monopoly, has announced new company plans and product line at the Computer Trade Show.

McNulty modestly proclaimed: "The new company will do for communications what Sinclair did for computers. The next and bigger boom area after microcomputers is communications. Our first product will link these two exploding markets."

McNulty's Interchange, as the new company will be known, is to bring out a modem operating at 300 bits a second at a price of £50.

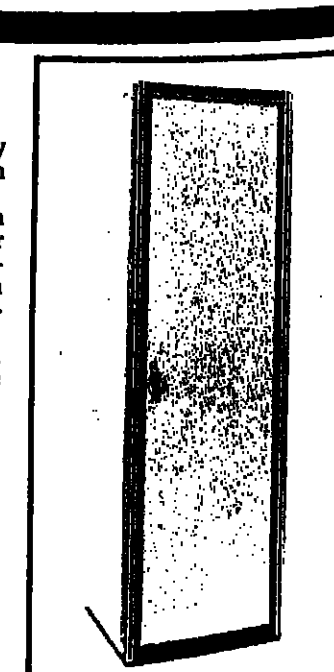
According to McNulty, ordinarily "low cost" modems have been in excess of £200.

The modem will comply with British Telecom requirements for approval, and McNulty has declared himself ready for battle with BT if it should obstruct his application for approval.

McNulty has taken on board someone to keep an eye on the finances, Margaret Clark, a qualified management accountant who joined as financial director from Data Efficiency.

"Having helped one millionaire make it, Data Efficiency's Mike Brewer with the Apple dealership, the second one should be easier," she stated with modesty.

McNulty also spoke on "Selling yourself."



Puzzle corner

PUZZLE time again. Study this photograph of a new product then answer the following easy questions:

1. What is it?
2. Which way up should it be?
3. What is inside?
4. How the hell do you take an interesting photograph of it?

Chad

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4/21/83 1:54p

Gathering storms on a mini

IN preparing a weather forecast, sufficient attention is paid to what happens to those showers and thunderstorms that pass undetected because no weather station is near enough to pick them up.

Such small weather systems used to be missed completely by weather observers, and their existence and development could only be guessed at. But the Meteorological Office is to install computer-based systems that will make a dramatic difference — one to detect thunderstorms in Europe and the North Atlantic, the other to measure rainfall in England and Wales.

The thunderstorm system will be the first in the world to track thunderstorms over a wide area using a computer. CAP Scientific has won the £200,000 contract to supply the system, which will be based on a Perkin-Elmer 3230 minicomputer.

The Meteorological Office will install seven outstations to record the electromagnetic radiation given off by the flashes: five stations spanning the UK, and two abroad in Gibraltar and Cyprus. The stations will be capable of detecting flashes anywhere in the world.

The radiation from the flashes of lightning will arrive at each outstation at a slightly different time measured in thousandths of a second. It is these time differences that will be used to fix the exact position.

Taking the strain on a desk-top

ENGINEERS can now use a desk-top computer to calculate the loads on big structures with a package just announced by a small West Midlands consultancy. The application, called finite element analysis, is the calculation of stresses and strains on big structures like oil rigs or bridges, and involves solving large numbers of mathematical equations.

Until now, these complicated calculations needed a mainframe, and small engineering firms had to use a specialist bureau. But now Engineering Computer Services (ECS) of 11a in Warrington, Staffordshire, has announced a package called Fesdec for an all-in price of about £20,000, which should appeal to small engineering consultancies.

Fesdec runs on Hewlett Packard's Series 200 desk-top computers and will work for small to medium sized problems, says support engineer Alan Perry. "If you want to analyse an oil rig, you still need to go to a big mainframe."

But Fesdec will enable engineers to investigate small parts of big problems to feel their way, and

only then transfer the data to a mainframe for the final analysis. This would save mainframe processing time, which does not come cheap from the bureaux.

Fesdec is quicker to use than a mainframe because there is less wait for printout. Perry says it is also more user friendly, and does not require great technical knowledge to operate.

Written in Basic, it takes advantage of HP's extensions to save memory. But a version is being written in Fortran to attach to ECS's Graftek computer aided design package that runs on a Gould mini. Graftek is for metal cutting applications, and allows a designer to draw up the shape he wants, and then to produce a tape to control the metal cutting process.

Graftek allows existing Fortran programs to be linked up for extra modelling without having to write more code.

ECS has also just announced a new application for process control in the plastics industry, which has traditionally been rather a black art.

"We are trying to add science and cut out the guesswork," says sales executive Dave Kirkbright.



Computer-control comes to Sir Francis Drake's game.

Bowls players have a ball

LEAF-GROWING and dense the two most popular pastimes in the North. But a close third is bowls. The game has about 500,000 players throughout the UK, many of whom pride themselves on their ability to run the ball on to a 1p piece from 60 feet.

But now a small Scottish engineering company has increased the potential accuracy by making the world's first bowl ball with computer control.

The diameter of the balls made is guaranteed accurate to the nearest thousandth of an inch, a tenfold increase in accuracy over existing balls.

The company, Tolpark Engineering of Cumbernauld, says it already has many top bowls players have shown interest. Managing director Colin Glendenning says that the company ran a test in which balls of various makes were given identical thrusts along the ground.

Needless to say, the Cumbernauld balls all landed in exactly the same position, while those of other makers were often a foot out. Sounds like the old washing powder "whiter than white" ad all over again.

Still, if Glendenning is right, the new balls will greatly improve the games of top bowls players, although it won't make much difference to the average public green player. And Glendenning is right to point out that the old wooden balls which were so proudly used by the old masters were in fact not very accurate.

PEOPLE



Memorex UK has appointed its customer engineering director John Clarke (above) as managing director. He replaces Mike Kitching, who has been promoted to vice-president of Memorex International. Clarke joined Memorex 12 years ago and Kitching has been MD of the UK company for five years.

John Furness has joined Rediffusion Computers as a systems analyst based in the Manchester office. He was formerly in the technical support team at the North Yorkshire County Council. The company has promoted Peter Oliver from senior engineer for the Newcastle area to branch customer services supervisor responsible for the North-eastern region. He joined the company in 1975.

Dennis O'Connor has been named as the new director of product marketing for Apple Computer UK. He was previously with Bank Xerox for 15 years, latterly as head of the advanced systems division.

Massor Systems International has appointed three non-executive directors to the board. They are: Eric Salbu, president and chairman of the Massor Systems Corporation; Nigel Keen, representing the European Banking Company and other investors; and Neil Pearce, a consultant to Advanced Technology.

DIARY

MAY 10 How to work with salesmen. Institute of Data Processing Management Sheffield branch, Grosvenor House Hotel, Sheffield. 7.00.

MAY 12 Information technology and employment, preceded by AGM. IDEM West London to Oxford branch. Bull Hotel, Gerrards Cross. 7.30.

Discussion on Royal Charter. BCS Chesham & Gloucester branch. Golden Valley Hotel. 7.30. Details from D. Went on Gloucester 416501.

MAY 11 AGM followed by computer graphics. BCS Bristol branch. St Vincent's Rocks Hotel, Clifton. 7.15.

Cable TV. E. J. Fowler, British Telecom Research Laboratories.

CONFERENCES

An international seminar on microcomputers and banks is being held in Luxembourg from September 15-16. Organised by Société des Polistes Internationales de Luxembourg, speakers will look at the possibilities offered by microcomputers to banks; which problems they have solved; what effect they have had; and how the future stands for micros in banks. There will be presentations on choice of hardware and software, the structure of projects, development, the role of the traditional EDP department and difficulties in adaptation by staff to new organisations. Details from the organisers at Boite postale 110, L-2011 Luxembourg. Tel: 209 31; telex: 2259 PORE LU.

Who should attend? — software managers — systems builders — educators — computer professionals

For brochure and further details write to: The Luxembourg Press Ltd (Southern) 23 Torrington Gardens, LONDON W11 2AB

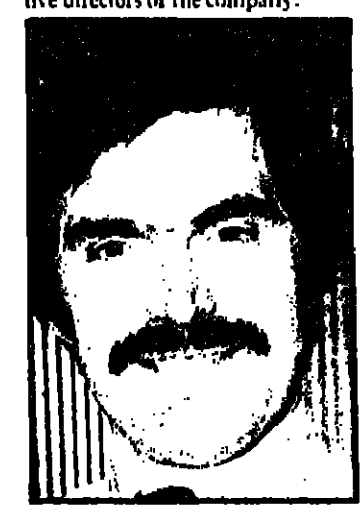
The software division of ACI has appointed Jennifer Lane to handle marketing and publicity for its Pulsar software. She joins from PR consultant, Nicholas Menden & Associates.

Colin Street has joined Hawke Electronics as product manager for the Interlink range of components and systems. He was previously distributor sales co-ordinator with Interlink.

Roland Wragg has joined the sales team of DEC distributor Alvernic Computer Systems. He has 12 years' experience of the industry, as programmer and senior business analyst, developing systems for the Reckitt and Coleman group.

Sperry Corp has appointed Professor Dr Herbert Gruenewald to its international advisory board. He is chairman of the board of management of the West German chemicals company Bayer AG. His directorships in Germany include Allianz Insurance, the German Association for Economic Co-operation, Degussa AG, Hapag-Lloyd AG, and Metallgesellschaft AG. He is active in over 70 professional and academic associations and in 1979 was awarded the Johann-Friedrich Schuber Silver Medal for outstanding achievement in business economics, company organisation and business leadership.

Dr Colin Phipps, chief executive and deputy chairman of Clyde Petroleum, has been appointed non-executive chairman of the board of Tandata Holdings. Peter Benton, until recently deputy chairman of British Telecom, and Doug Sarchett, director of Cartmore Investment Management, have been appointed non-executive directors of the company.

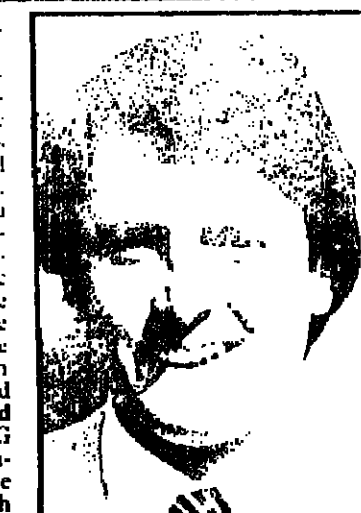


Andrew Crisp (above) has joined Thorn EMI Datareach as product support manager in the company's data products division. He was previously with the DEC authorised terminal distributor Comas Computers, in a senior customer and sales support role.

VNG Professional Services has announced a new appointment. Eric Brindley has been named as account manager for all the company's dealings with R.I. He previously spent almost 20 years with ICL, latterly as regional systems development manager. Malcolm Chadwick is to set up a VNG office in Solihull, West Midlands. He was formerly UK marketing manager with Pansophic Systems. Ron Cleasby joins the company as regional representative for the North-east of England. He was previously systems manager in the petrochemicals of ICL, based in Wiltton. Finally, Barry Hodfield joins the Southern office of VNG with sales responsibility for Central London and South of the Thames. He was previously with SCR.

Lee Hazelgrove has joined Insight Marketing & Personnel Consultants' London office as senior consultant. He has over 20 years' sales and marketing experience in the computer industry with IBM, ICL, National Semiconductor, and, most recently Terminal Display Systems.

The IBM Computer Users' Association gets a new secretary this month. He is Neville Boothroyd, who is about to retire from IBM, where he has worked since 1956, starting as an electronic switching engineer and serving latterly as marketing staff manager.



Adrian Bailey (above) has been appointed director of Greenwood-Smith Associates, the computer firm serving the timber industry. In addition he heads the company's communications division with responsibility for the sales and marketing of the GSA Nu-Dial telex equipment for microcomputers. His appointment as director gives him total control of the sales and marketing activities for all GSA hardware and software.

OCC Personnel (Southern) has appointed Peter Lloyd as senior consultant to head a specialist sales and marketing recruitment division.

CONSULTANT'S CASEBOOK

Transport of delight for the DPM

WHEN a user department first gets its own computer, it often finds it has bitten off more than it can chew. But the results, if properly managed, can be beneficial to users and to DP departments alike.

We had been called in by the DPM of a manufacturing company based just outside Reading. Our previous work for them had been mostly concerned with hardware reviews — operating system performance, storage upgrade studies, and the like. Their latest requirement, however, was for a feasibility study into the transport manager's need for his own minicomputer.

The company ran a sizeable truck fleet to distribute its finished goods to wholesalers around the country. They had been using Telex Instruments (TI) hand-held computers to calculate trip costs and evaluate alternative journeys. The transport department now felt that it was time they upgraded, under their own control, to a small mini.

The mini would allow them to store route data, mileages, and truck performance data online. This would save the present laborious manual table look ups and consequent input into the TI. But the DPM was worried. Didn't this represent the thin end of the wedge? Did it mark the start of a proliferation of equipment? And the end of professional standards?

I had met the DPM before. He was a nice bloke and a bit of a fitness fanatic, jogging every morning, and playing squash two or three times a week. I got on with him very well, having played squash myself for some years, before old age caught up with me.

I could see that he was genuinely concerned about an erosion of standards, and, of course, a lessening of the role of his department.

We were to perform the feasibility study on his behalf. In essence, we were to adjudicate and arbitrate after all wouldn't the main frame be a far better alternative?

brief study, the answer was no, it wouldn't. The transport department already had a well defined knowledge of its requirement and the logic in the TI programs could easily be transcribed and extended on to the mini. The transport people felt that by the time they had relayed their knowledge to the computer department's systems analysts, they would already have incurred a high cost. In any event,

to a mini (and since the transport manager was an influential individual within the organisation) our report found that a mini installation was feasible and recommended the use of a small PDP/11, in line with the company's DEC policy.

Based on his experience with the TI system, the transport manager was adamant that full systems development on the mini would be

proach to the project, and increased the transport manager's appreciation of the professionalism of the DP function.

No further developments have been contemplated for this equipment, beyond minor upgrades and enhancements to the original application. Furthermore, no other equipment requests have been received from other parts of the organisation. The initial testing troubles of "transport's" mini were broadcast throughout the company, and no other department seems keen to repeat them.

The transport people learned that there is a wealth of difference between the hand-held desk-top computing devices they were used to, and "real" computer equipment. They learned also, and came to respect, the benefits of the professional approach to design and programming as advocated by the DP department.

The company as a whole has benefited from an "increased efficiency in its truck fleet utilisation. And both users and DP personnel have come closer to understanding their mutual inter-dependence. The computer department has now come to terms with the renegade outfit. And no longer see it as a threat.

PUZZLER

RTMP
L BT
I TS
RL

THIS week's cryptarithm, with three linked division-sums attached one upon the other, looks just a jumble of letters at first sight. However, there is a hidden message, and an orderly "problemist" might provide an immediate answer. Page 46 shows how.

achieved with something around six man months of programming effort. We were rather more sceptical and conservative in our estimates.

Additionally, we recommended that the project development standards in use by the DP department should be followed for this new development. Also, an experienced Basic programmer from the DP department should be assigned to the project in a hand-holding capacity to assist the transport people in their development.

The proposal was accepted in full (if somewhat reluctantly by the DPM) and equipment ordered and installed.

The outcome has been a successful user-led project giving all the benefits foreseen at the outset.

However, the development took three times as long as the transport department had foreseen. Despite our warnings and pointers, the user department did not comprehend the complexities of the development until the machine was installed and the practicalities of operating, maintaining, and developing on it were encountered.

To the surprise of the DPM the credibility of his department has risen dramatically. The programming expert assigned to assist in the project remained throughout the life of the project, and greatly assisted in guiding the user team in design and programming techniques.

The use of the established development standards ensured a well documented step-by-step ap-



Voluntary system runs into race problem

COMMUNITY Service Volunteers has installed its first computer — and immediately run into a controversy over what information to store on it.

Industry Minister Kenneth Baker recently launched the computer, an Alpha Micro 1041S, to run CSV's volunteer placement system which helps to match new volunteers with suitable opportunities.

Details of volunteers' past and preferred work are kept to match with the types of service such as hospitals, old people's homes, group community hostels and residential centres for the physically and mentally handicapped.

About one in 10 of the volunteers has a criminal history, and this has to be recorded. Youth with a propensity to violence may not be suitable for keeping old ladies company.

But the main controversy is whether to hold details of race.

Why hold such detail? At all, you may ask. The problem is that CSV relies on voluntary donations as well as people, and sometimes the donors ask awkward questions, like how many black people are in service.

A spokesman says that it has yet to be decided what to do. The computer will hold details of several thousand volunteers, past and present. Some are themselves disabled and need another volunteer to help them. A lot of the work involves a one-to-one relationship with the subject, who may be recovering from a mental illness, or have suffered temporary loss of memory after a car crash.

The program that drives the database was written in Basic with the help of ANDI, a program generator developed in the US. CSV's computer development manager Vidas Domika says ANDI has cut down program development time by 75%.

On the face of it, and after

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PRODUCTS

Half-hour of Gould power

POWER supplies for small systems have been launched by Gould. The WSU range of uninterruptible power supplies provides 30 minutes of power after a main failure.

Each unit is self-contained and consists of a battery, charger and inverter. Extra batteries can be added for longer back-up times.

The WSU range also protects systems against line noise which can cause system malfunctions. An audible warning sounds when a power failure occurs, while a display provides a constant status check.

The six units in the range cover outputs of between 160 and 500VA and nominal input and output voltages of between 220 and 240 volts. Output current limiting is provided to protect against inadvertent overloading and there is an automatic cut-off feature to cope with short-circuits.

Gould Electronic Power Conversion Division (CW), Rhoymedre, Wrexham, Clwyd LL14 3YR. Tel: (0978) 821000.

32K EPROM for Newbrain

A 32K EPROM module for the Newbrain portable microcomputer has been developed by Grundy Business Systems. The module is designed for OEMs, scientific users or anyone else who wants to customise a Newbrain.

The module provides four 8K EPROM sockets and plugs into the computer's standard 50-pin expansion port.

EPROM programs can be developed on the Newbrain in Basic or machine code. Grundy also offers an EPROM blowing service for OEM customers.

Grundy Business Systems (CW), Somerset Road, Teddington, Middlesex. Tel: 01-943 1901.



The new Cifer Club for £3,395.

Cifer's compact Club

CIFER has announced a Winchester-equipped microcomputer: the Cifer Club, priced at £3,395. It has a large storage capability, a built-in 800 Kbyte floppy disc drive, and connectors so that extra external drives from the Cifer 6000 range can simply be plugged in.

The Club uses Cifer's advanced multiple processor system. This gives many useful features, such as a display memory that allows up to 168 lines to be recalled to the screen; a keyboard with 40 reprogrammable keys; and software loadable character set.

Japanese printers for UK

JAPANESE printers from Star Manufacturing Company have been introduced to the UK by the exclusive distributor, Micro Peripherals.

The products are matrix printers running at 100 characters a minute. The DP510, at £349 plus VAT, has a 30-inch, 80-column



The Model 709 portable data terminal from Texas.

Terminal in briefcase

A LIGHTWEIGHT, battery-powered portable data terminal which fits into half a standard-sized briefcase, is announced by Texas Instruments.

The Model 709 is a development of the company's popular family of Silent 700 products first introduced in the late 1960s, but the new model has many enhancements.

"The Model 709 has been significantly reduced in size, weight and price as part of TI's strategy to meet the needs of the mobile white collar worker," said Eric Jones, president of the Data Systems Group of Texas Instruments.

At 6 lbs (2.72 kg) without batteries, the 709 cuts the weight of TI's existing portable terminals by half, which themselves at 13 lbs are considered easily portable.

The terminal, when powered by an optional battery pack, provides its users with up to two hours' continuous operation.

Access to remote computer systems will be available through a modular jack connection from the internal modem, or by the optional acoustic coupler through a standard telephone handset.

When used with the acoustic coupler and battery pack options, this even permits the use of the Model 709 in a telephone kiosk.

Standard features of the Model 709 include a full-sized typewriter-like keyboard, and print formats of both 80 or 132 columns per line from the totally new, virtually silent, 9x1 element, user-replaceable printhead.

An innovative ease-of-use feature is the provision for optional Solid-State Software cartridges which can provide special computer-like features and functionality.

Texas Instruments (CW), Manton Lane, Bedford MK41 7PA. Tel: 0234-67466.

Technology aims at mass market

A RANGE of low-speed modems starting from £175 has been introduced by Modular Technology. The announcement coincides with a change in corporate policy from high technology low-volume products to mass market products.

Entirely the V Series, the range comprises CCITT compatible 300, 1200 and 2400 baud modems for both private circuits and attachment to the public network. These asynchronous and synchronous modems have British Telecom approval. The range also includes viewdata Originate and Answer modems.

Manufactured in the UK the V Series is supplied under a two-year warranty. Modular Technology is to exploit two major markets with this product, "primarily the microcomputer market," said Peter Thompson, sales director. "We will be looking for distributors throughout the country. Current test marketing at our retail outlet in the City, The Computer Terminal, has proved promising. Practically every professional user of microcomputers needs communications at some time. The V Series provides that capability at prices to suit that market."

"Furthermore, there are few vendors in that market that provide a two-year warranty. We see ourselves as setting an example to the rest."

The second area is the high-volume catalogue market.

Micro Peripherals (CW), 69 The Street, Basing, Basingstoke, Hants, Tel: (0256) 34331.

Mannesmann adds to micro printer range

THE MT180 series is Mannesmann Tally's latest addition to its MT100 family of matrix printers. It is a 132-column multi-function printer series, producing correspondence, draft/data processing and plot mode printing at up to 160 cps.

Designed for compatibility with most popular microcomputers, the MT180 printer incorporates both serial and parallel interfaces as standard.

The range has the unique feature of daisywheel code compatibility, which is essential for operation in correspondence mode. In addition, to meet the interfacing requirements of Commodore micros, the MT180C has been developed with IEEE compatibility.

A further specialised model is the MT180S for interfacing to the Sirius microcomputer, offering a low-cost printer capable of reproducing the high-quality graphics of the Sirius.

The MT180 series offers fine dot-addressable graphics for the production of bar charts, pie charts, curves and other screen-constructed images. Graphics displayed on a terminal can be reproduced to exactly the same size, via a special protocol, with the printer set in plot mode, says Mannesmann Tally.

The series includes seven language multinational character sets for drafts and correspondence. Data processing mode also features total control of margins, tabulators and sub/superscript. Special user character sets can be downloaded via the interface. Character pitches of 10, 12, 16 2/3 and 20 cpi are easily selected, with an additional capacity for double width and height characters for applications where good presentation is vital.

The various modes and character sets for data and word processing can be selected either through the menu or via the interface. When selections have been made, they are stored in memory even when the printer is switched off; while the printer is on, these default parameters are automatically re-loaded.

Mannesmann Tally (UK) (CW), Molly Millars Lane, Wokingham, Berks RG11 2QT. Tel: (0734) 788711.

Competitor for VT100

A NEW competitor in the Digital Equipment VT100 display terminal market is the Z29-EU from Zenith Data Systems. The product is also compatible with many Ansi protocol terminals.

Terminal specifications such as speed and parity checking method can be defined by the user through the keyboard.

The Z29-EU has 95 Ascii characters, 33 graphics characters and a 128-character set which includes subscripts and superscripts. VT100 graphics and something called social symbols. Editing facilities include character and line insertion, tabbing and protected fields.

A "screen saver" feature automatically blanks out the screen after 15 minutes of inactivity to preserve the life of the display. Other features include a 24-hour clock, diagnostics routines and an expansion socket for adding 32K of memory.

Zenith Data Systems (CW), Bristol Road, Gloucester GL2 6RE. Tel: (0452) 29451.

Draughting on DEC minis

THE Cadbird two-dimensional computer-aided draughting package is now available on Digital Equipment PDP-11 minicomputers. A new version has been developed in Fortran by International Research and Development.

The company says the system is controlled using simple commands entered through the keyboard.

Cadbird provides facilities such as zooming, mirroring, calculations, outlining, symbol handling and automatic dimension calculation. It can be linked to numeric control tape preparation systems.

International Research and Development (CW), Fosseway, Newcastle-upon-Tyne. Tel: (0632) 650451.



The Tektronix 4115B terminal.

Colour graphics launch

TEKTRONIX has added a high performance raster scan colour graphics terminal to its 4110 series of intelligent display products. The 4115B is said to display high density graphics at display speeds which enable it to meet the demands of applications in mapping, circuit board design, and finite element modelling.

Graphic images stored in the terminal's 32-bit co-ordinate space are displayed at a resolution of 1280x1024 pixels and a picture repetition rate of 60Hz, a figure which greatly reduces flicker and consequent operator fatigue. A neutral density filter consisting of optical coatings is employed to provide optimum contrast, even under conditions of high ambient lighting.

The 4115B incorporates a proprietary technique that virtually eliminates convergence errors in the shadow-mask colour tube display, says Tektronix. Called Tektronix Auto-Convergence, it uses a feedback method of sensing and dynamically controlling convergence, reducing misconvergence errors to less than 0.2mm over the display area.

Tektronix UK (CW), PO Box 69, Harpenden, Herts. AL5 4UP. Tel: (05827) 63141.

Interlocks eliminate fire hazard

A SAFETY interlocking system designed to protect personnel entering electrically hazardous areas fitted with automatic carbon dioxide fire extinguishing systems, has been developed by Castelli.

Standard water sprinkler fire extinguishers cannot be used in switch rooms, computer control centres and telephone exchanges, because the water would cause as much damage as any fire that occurred. Automatic carbon dioxide extinguishing systems, activated by heat or smoke detectors, are now commonly used because this gas will not support combustion or cause damage to electrical equipment. This type of system is designed to flood a predetermined area within seconds. A person inadvertently trapped in the area when the gas is released would quickly asphyxiate.

Castelli's solution to this problem uses key transfer interlocks to ensure that access for maintenance and servicing work is made dependent on temporary isolation of the carbon dioxide supply line. Two bolt interlocks are fitted to the gas inlet valve; one to lock the valve open and one to lock the valve closed.

Castelli Safety International (CW), Kingsbury Road, London NW5 2PL. Tel: 01-262 4000.

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Freelance market shows signs of breaking through the slump

Agencies' order books are running at the highest level in years, says Philip Hunter

The contract market is growing again after several stagnant years, with most of the big agencies reporting a modest increase in business this year. Biggest agency of all, VLI, took 136 new contract assignments in the last 10 weeks, a 6% increase on the previous 10.

"Our order book is running at the highest level since 1974," says John O'Sullivan, managing director of the UK's third largest agency Trident. Similar comments can be found elsewhere, although most agencies agree that the increase in business is modest

as yet, and applies mainly to specialists rather than new-comers to the contract scene.

Junior Cobol programmers will still find it hard to find their first contract. But ICL programmers with several years' experience of the operating systems and database applications are much more in demand than a year ago, as are contractors for mini and microcomputers.

Comac, one of the young agencies which has rapidly grown in the improving climate of the last year, reports a new demand for programmers skilled in the CIS Cobol for microcomputers developed by Swindon-based MicroFocus.

There are also contracts for Pascal programmers on microcomputers, according to Comac's founder director Mike Winsley.

But some market areas are declining. Demand for IBM CICS programmers is low, although Comac recently placed 20 contractors with IBM IMS experience at one client.

Agencies earn their living by taking a slice, usually 20% to 25%, of the fee charged for the contractor's services to the client company. They therefore have to adjust both the fee they charge the client, and the smaller amount of money passed on to the contractor

in order to balance supply and demand of labour and contracts.

At present the market favours the contractor. "We can find jobs for all good people," says O'Sullivan of Trident. "For every good contractor, we have three or four good jobs."

In an attempt to satisfy rising demand for skilled contractors, Trident is shortly starting a television advertising campaign. Another sign of improving times: Trident recently became the first agency to go public on the Unlisted Securities Market.

Footloose and fancy free contractors are attracted by the overseas market, which some agencies say has grown enormously in the last year. Comac says there are many contracts for people with financial and commercial expertise in both the Benelux countries and the Middle East.

There is also a market in the US for UK programmers, but demand is more fickle, and there can be a problem with immigration which can take several months. The big agencies can however speed up the immigration process by dealing directly with large US corporate clients.

Demand for contract operators has held up better than expected, although only three of the big agen-

cies, VLI, Knight Computer Services, and KPG, still deal in them. VLI admits that the mainframe operator is an endangered species, but will probably survive another six years.

However the increasing sophistication of hardware has expanded the role of operators to include network control, and even some systems programming. KPG managing director Brian White says that contract operators are being hired more for specific tasks, and the length of contracts is increasing.

An attack was launched last year on the agencies by a company called Willoway, which published a national directory of contract staff. Willoway advertises for contractors just as the agencies do, and lists their curriculum vitae in the directory, to which companies can subscribe for £380 a year.

There are already 3,000 contractors listed on the directory, which so far as attracted about 60 subscribing companies, and has found jobs for about 30 contractors. The agencies hit back at Willoway's directory when it first came out by claiming that it would be too much work for a company to use, and that the human touch would be lost. But Willoway has its own computer system just like

some of the agencies, which it uses to match customers' requirements with contractors. Willoway also undertakes to notify selected contractors of a company's interest, and it is up to the prospective contractor to phone the company for an interview.

Unlike the agencies it fails to negotiate pay and arrange the interview. But the company will probably be paying less for the contractor, since there is no agency cut. Some subscribers to the directory think that the contractor will do better out of it financially than the client will through lower fees.

Neither than claim that Willoway's directory lacks the human touch, or that it makes more work, agencies are probably on firmer ground to criticise it for failing to provide companies with access to skilled people. As one subscriber to the directory said recently: "There is a lot of riff raff on the directory."

Knight says that like Willoway it has about 3,000 contractors listed on its computer. "But what is more important is the number of people you are in close contact with," says managing director Ian Humphries.

"If we were in close contact with 20% to 30% of those, I would be pleasantly

surprised," Humphries admits. Many of the rest would be unavailable for work, and their records would be out of date.

A development being closely watched by some of the agencies is the Data Protection Bill. This is because some agencies keep confidential records of contractors which include unofficial references gained from previous employers, and even rival contractors.

If the Bill gives individuals access to manual records concerning them, then the agencies will not be able to keep potentially libellous comments about contractors on file. As it is, agencies take great care over references for contractors. Humphries of Knight points out that some information can be kept on a manual file that is not suitable for a computer file. Epileptic contractors are for example unsuitable for an unaccompanied night shift. But they would be fine for normal work since there are plenty of people around to help if they have a fit.

HUMPHRIES... Keeping an eye on Data Protection Bill.



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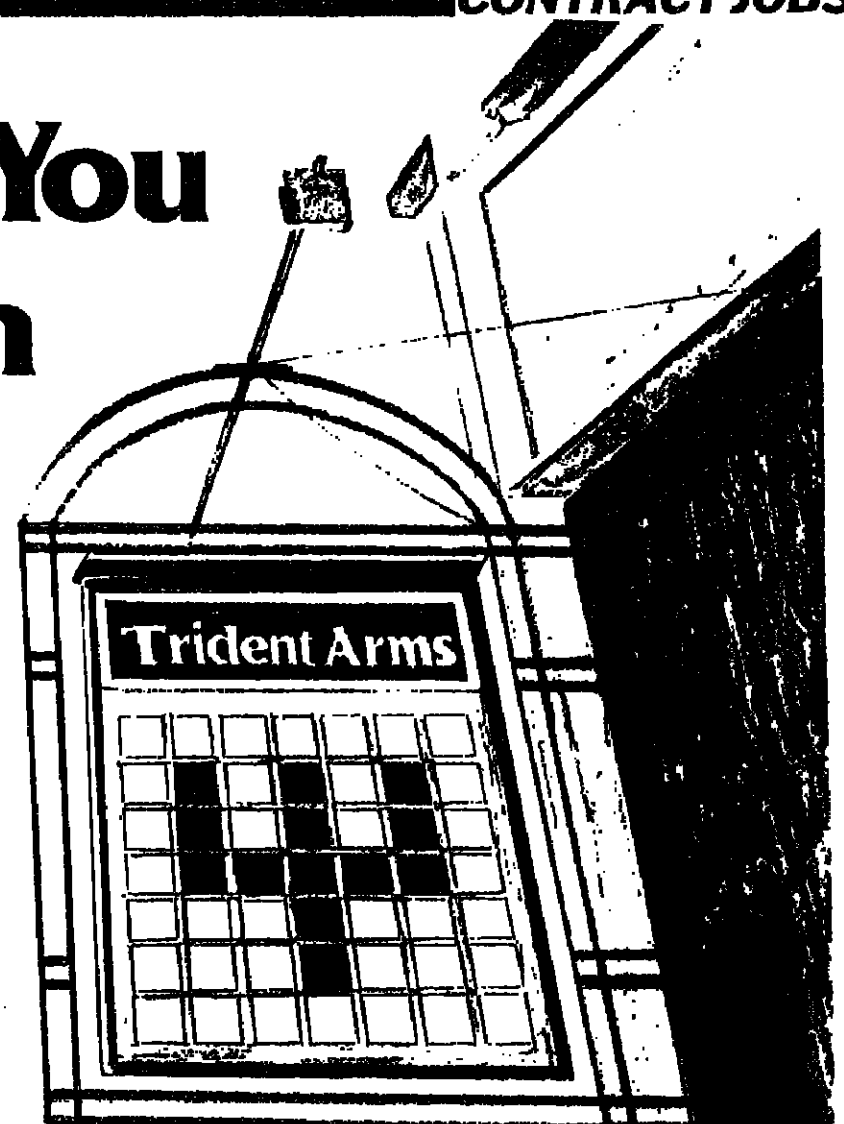
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Days of the creative genius are numbered

Software Blueprint and Examples. Yachan Chu. Lexington Books £29.50

THE reaction against programming as a mystical art form continues to gather momentum. Software engineering principles are being developed into practical tools. The days of the creative genius inventing new assembler routines for calculating check digits in every installation are surely numbered.

Yachan Chu believes that software development should take place in the same rigorous manner as hardware engineering. His software blueprint serves the same purpose as a normal engineering blueprint. It should be understandable, detailed and correct. The purpose of his book is to explain the theory and illustrate the practice of the software blueprint.

The first chapter describes the software blueprint methodology and gives a fairly simple example

of its use. Chapter two deals with software engineering concepts. Much of this chapter would have been better placed prior to much of chapter one.

The following six chapters (75% of the book) consist of detailed examples of the use of the software blueprint. Finally the author describes the blueprint language SDL.

The author's clear style of writing makes this complex subject understandable. The book's size is increased dramatically by the wealth of detailed examples, and an understanding of the theory can be gained without going through all of them.

For the systems programmer wishing to apply the theory the examples provide excellent teaching material using applicable software systems.

It is becoming increasingly apparent that software engineering principles will require or cause or-



"Well, I suppose it's a novel way of developing software".

ganisational changes in the way programming is carried out. This book might not be readily understood by commercial application programmers and its examples would be foreign to them. The application of rigorous engineering principles may require greater technical expertise located in fewer individuals.

Yachan Chu's book is for specialist manufacturers of software and will undoubtedly be used in software design courses.

W. B. Scott-Jackson

Database listing fills business need

Computer-Readable Databases: A Directory and Data Sourcebook. The American Society for Information Science and the University of Illinois. Compiled and edited by Martha Williams. Knowledge Industry Publications, 701 Westchester Ave., White Plains, New York. \$120.

IT'S all well and good to have a plethora of computer-readable databases available, but how do you go about finding the right one, and finding out what information it contains, and how comprehensive it is? Until recently, it wasn't easy - the information was scattered and not available from one encyclopaedic source.

This publication, a massive, 1,500-page listing of some 773 databases for sale to the business public, remedies that lack. The very existence of the book is graphic testimony to the growth of both the computer and database industries in recent years: the earlier edition, in 1979, listed 528 databases, so the number has grown significantly in recent years.

Databases included in this publication meet three criteria: computer-readable, public availability

for lease or sale, and word orientation, i.e. containing words or phrases, not just numbers. This means that some important databases have been omitted, since there are over 1,300 machine-readable databases now extant. Still, this work is valuable and comprehensive, and should meet most needs.

Some of the databases listed are available on tape, for processing at a buyer's DP site; others are accessible via terminal which, in practical terms, means subscribers can be located anywhere in the world, provided they are willing to pay the telecommunication costs. The implication for DP managers is that although they are probably not the prime target for the information in the book, they will inevitably become involved in some way in locating, recommending or processing the databases.

The listings show a fine, logical mind at work: every listing contains comprehensive information about the producer of the database.

Howard Karten

PRODUCTS

Programming and design station launch

A SIMPLE plug-in logic device programming module announced by Euro Electronics for the Digilec UP803 Logic Centre is said to turn it into a complete logic design station.

Logi-Fam will allow the design, programming and test of all currently available logic devices, including PALs, FPLAs, FPLs and FPGAs, says Euro Electronics. The result is a compact desk-top modular unit, with easily interchanging device adaptors to handle new devices as they become available. This eliminates obsolescence, and keeps both software and hardware up-to-date.

Another feature is that all the necessary design intelligence is resident in Logi-Fam and no accessory adaptors are necessary.

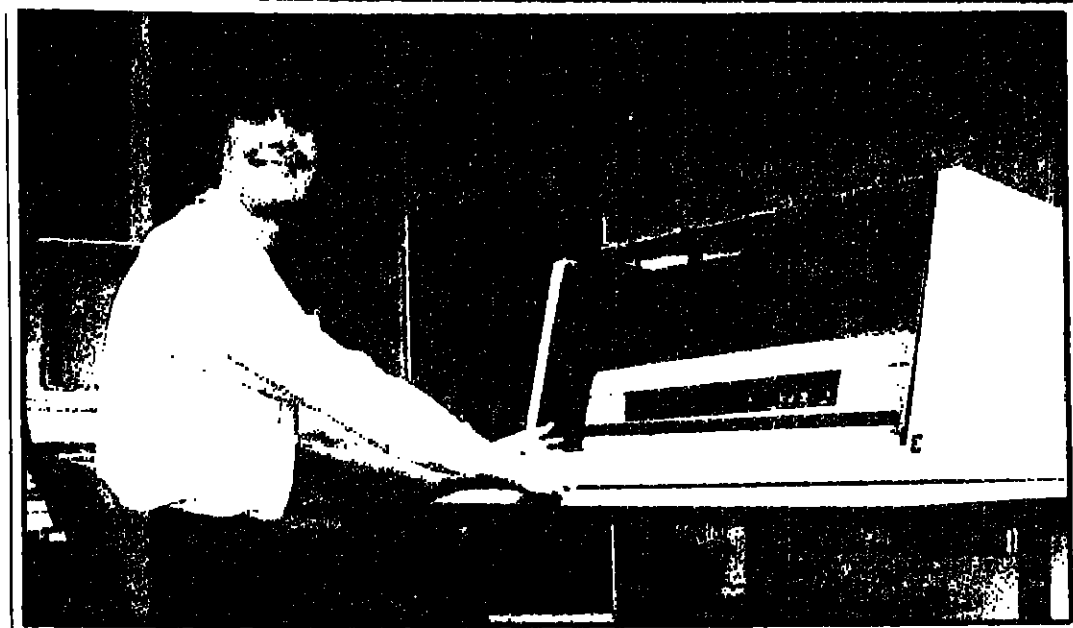
Logi-Fam contains all the software to enable the UP803 to work interactively in conjunction with its built-in CRT, keyboard and menu-driven software. In the de-

sign mode, the resident assembler allows direct keyboard entry of either Boolean equations or H and L tables for function definition, which are then displayed on the CRT. Alternatively, a matrix can be designed on the CRT using the cursor and the disassembly function can be used to display the Boolean function corresponding to the fuse pattern.

The wide range of PROM configurations and types now available is catered for by the Uni-Fam module which allows the UP-803 to program up to 300 types with just a switch selection. Device adaptors provide for wide range of devices and pin numbers.

Direct connection with microprocessor development systems is possible.

Euro Electronics (CW), Twyman House, 31 Camden Road, London NW1 1YE. Tel: 01-267 5416.



Shannon Datastor's acoustic hoods keep down office noise.

'Printer hoods cut noise by 85%

NEW ranges of UK-built printer hoods and terminal turntables have been launched by Shannon Datastor.

The hoods are said to cut noise by 85%. They are available for every printer on the market and can handle sheet-fed or continuous stationery.

Each hood has a removable base which enables the user to attach it to the desk rather than the printer. Gas dampers prevent the smoked perspex hood being damaged if it is slammed shut. Hoods with one or two cooling fans are available to match the needs of different devices. Prices start at £225.

The turntables enable two or more users to share one terminal. Standard models start at £30.50 and the heavy-duty versions cost from £72.50.

Shannon Datastor (CW), 36 Croydon Road, Beckenham, Kent BR3 4BH. Tel: 01-650 4818.

Northern Telecom adds to range

LATEST development in Northern Telecom's advanced distributed data processing systems, the Model 555, offers a wide range of functions for a medium sized system, which is designed to handle both data and word processing applications with speed and economy.

The Model 555 features Winchester disc storage and a high speed CRT display.

It supports up to eight data stations (local or remote) and up to eight printers. It has 448 Kbytes of main memory, plus 22 Mbytes of Winchester disc storage. A 15 Mbyte tape cartridge gives secure system use and easy program maintenance, while an additional 149 Mbytes of removable disc storage is available for large volume requirements, says Northern Telecom.

Model 555 systems can be configured according to the user's requirements. Compatible peripherals include local and remote data stations.

Northern Telecom (CW), Data 100 House, Arden Grove, Harpenden, Herts. AL5 4UD. Tel: (05827) 63161.

Major contribution to computer education

Structured Programming with BBC Basic. Roy Atherton. Ellis-Horwood (1983). £6.95 paperback.

AT last we are beginning to see the emergence of a third generation of Basic programming texts.

When I wrote my own (first generation) book on Basic back in 1976, I thought I had done my duty by covering the rules of the language in a sensible order and presenting some example programs. In those days time-sharing on a mainframe or large mini was the normal mode of using Basic.

Then the microcomputer volcano erupted, swiftly followed by a lava flow of second generation (and mostly second rate) Basic books. Aimed squarely at the home user, these volumes were rushed into print to tell the poor punter what the manufacturer's manual had left out. In other words they were full of "hints and tips" - arcane pieces of information about ROM locations, machine-code kludges and so forth.

Now the audience is becoming more sophisticated. Even committed hobbyists realise that there

is more to being a good programmer than knowing plenty of VDU codes or memorising lots of arbitrary PEEKS and POKES.

Atherton's book fulfils the requirements of this new audience. It stresses a few fundamental programming concepts instead of a lot of messy details. As he says: "A good program is one that is easily understood. That implies that its approaches should reflect its function and that, in turn, implies that it should be well-structured in its design, coding and implementation."

BBC Basic has just enough structure to raise it above an important threshold - the point at which program design dictates syntactic form, rather than vice versa - and Atherton exploits this to the full. By doing so he has made a significant contribution to computer education.

If this book is widely adopted in schools and colleges it will have a very good effect. Its readers will learn the skills of problem analysis and program design before being dazzled by the superficial brilliance of the clever-tricks brigade.

Richard Forsyth

Useful text book - if you can unravel the threads

Decision Support Systems for Effective Planning and Control. Robert Thierauf. Prentice Hall. £27.20.

DECISION Support Systems (as discussed in 1980 at the 13th Hawaii International Conference on System Sciences) describes the concept of interactive computer based systems to support unstructured decision-making. R. J. Thierauf attempts to describe and illustrate DSS using a major case study. This covers the analysis, design and evaluation of the main systems in a progressive manufacturing company.

Part one surveys current information systems, i.e. MIS and DDI and describes the role of DSS in that context.

Part two describes DSS and analytical framework for its use. Many of the points made in part one are reiterated.

Part three covers design aspects and equipment selection with several perhaps superfluous illustra-

tions of equipment (eg IBM 3770 and 3780 Direct Access storage devices).

Part four discusses strategic planning at the corporate level and introduces specific packages.

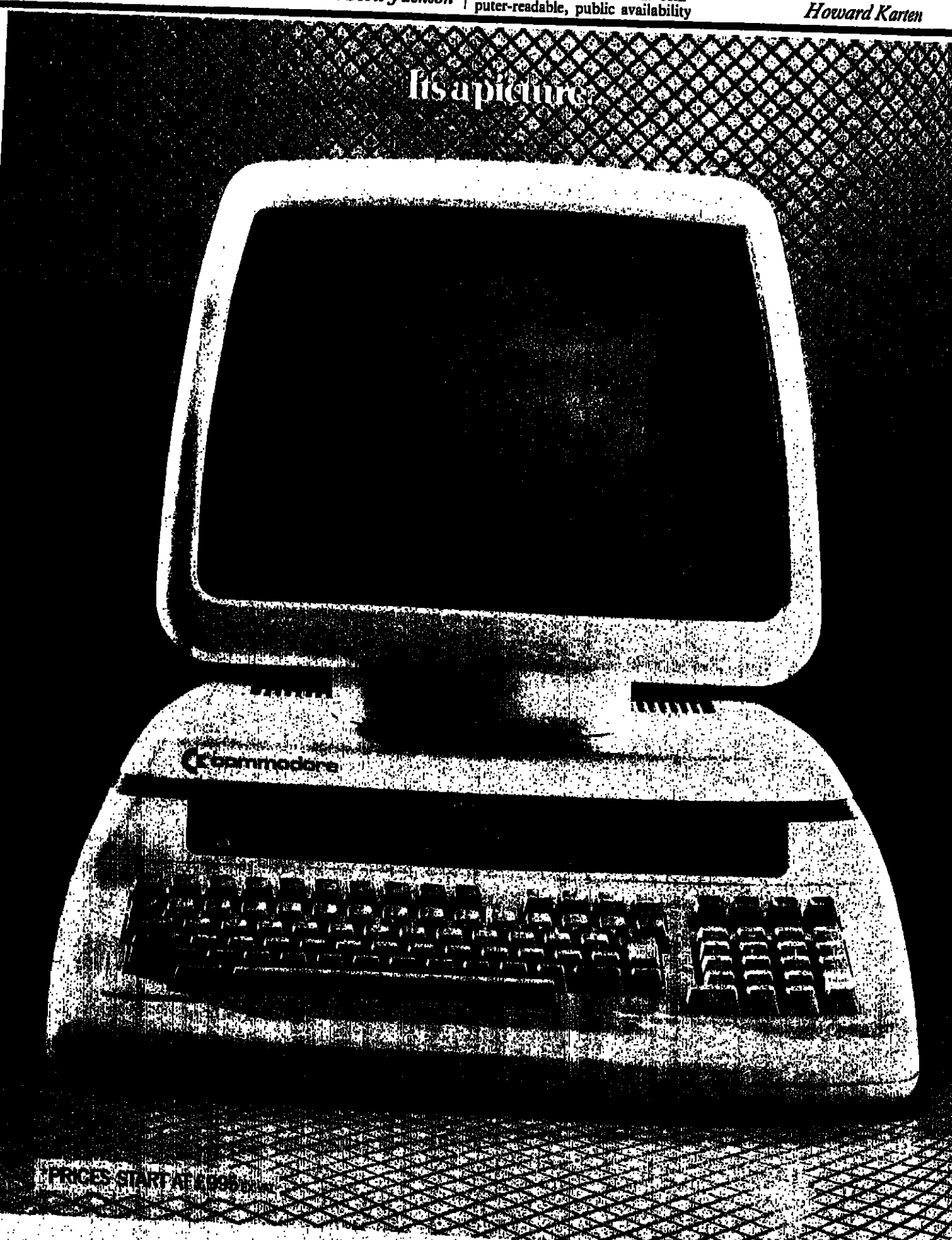
Part five again discusses several specific packages and illustrates several subsystems for the overall case study.

Part six introduces various behavioural theories which impinge on DSS and completes the case study.

The text is wide-ranging and it is often difficult to "weight" the information given. Some of the context is probably background information but is not easily recognised as such.

Despite being overweight the book fulfils its function as a textbook on 'Decision Support Systems'. It would be usefully read by systems practitioners or students provided they can unravel and separate the complex threads running through the text.

W.S.J.



And it's worth a thousand words.

The brilliant new Commodore 700 is arguably the most aesthetically pleasing micro-computer ever designed.

Beauty and brains allied in the most literal sense.

Beneath the soft-sculpted lines of the 700 lies the most impressive achievement in technology from one of the world's leading micro-computer companies.

Built to a standard and to a specification which no competitor comes close to emulating, and at a price* which makes this fact all the more remarkable, the Commodore 700 is unique.

It is a very special computer indeed.

However you care to look at it.

SUMMARY SPECIFICATION

1. Tilt and swivel anti-glare 80 column green-on-black display screen.
2. Comfortable, easy-to-use detached keyboard with sculptured keys, separate calculator pad, isolated critical operation keys and separate cursor controls.
3. Ten special function keys are programmable in BASIC or machine code to execute twenty special operations.
4. Capable of addressing 896K of user RAM. Available with either 128K or 256K as standard. Configured in 64K banks with switching managed by the 6509 processor.
5. The full RAM is available for machine code programs. BASIC programs can be up to 64K in length with the remainder of the RAM available for variables and/or data.
6. Integral dual disk drives with direct memory access available as an option.
7. An optional dual processor - the Z80 or 8088 - can operate concurrently with the standard 6509. This enables access to the existing library of CP/M® programs.

8. Interfaces through several ports - IEEE-488, RS 232C, CBM cassette, 8 bit parallel, and cartridge slot. Built-in networking capability.

9. Supports a full range of peripherals including dual disk drives, hard disks, dot matrix and letter quality printers, and plotters. Works with all existing Commodore systems peripherals.

10. Standard language is BASIC 4.0 plus, so existing Commodore 8000 system programs in BASIC are easily converted. Soft loaded languages will include UCSD Pascal and Fort.

11. Includes a sound synthesis chip to produce a full range of "noise" and music effects.



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For a thousand words and more on the Commodore 700, and the address of your nearest Commodore dealer, telephone or write to us at:
The Commodore Information Centre,
675 Ajax Avenue, Slough, Berkshire SL1 4BG.
Telephone: Slough (0753) 79292.

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0491/101/1-154



Output from the PRINCIPLE plotting system.

Speeding designs

AN electrostatic plotting system called PRINCIPLE (Printed and INtegrated Circuits PLOtting Electrostatically) launched by Calma is designed to speed the production of high-resolution hard-copy output from the company's GDS II computer-aided printed circuit and microelectronics design systems.

The new system produces plots more than 10 times faster than a conventional pen plotter, says Calma, and offers higher reliability because of the low number of moving parts. In addition, built-in purpose-designed software removes the need for operator programming and offers further speed increases in what has traditionally been a bottleneck in the electronics

CAD/CAM process. Tapes or disc files can be generated which allow the electrostatic plotter to function in the background without interrupting the design process, and extra copies of each drawing can be produced in a matter of minutes, says Calma. Plots are printed with a resolution of 200 dots an inch, allowing complex VLSI circuits or dense circuit boards to appear in sharp, readable detail. The system can produce plots on opaque or translucent paper and on transparent film.

Calma UK (CW), Beech House, London Road, Camberley, Surrey GU15 3HR. Tel: (0276) 682021.

Personal security

A NEW magnetic stripe card validator from Datastripe provides a simple and secure way of encoding a personal identification number on a standard card with a magnetic stripe. The Magtek MT-60 is compatible with all the main personal identification number encoding methods. It is aimed at banks and building societies and security applications such as controlling access to restricted areas.

A bank clerk, say, can pass a customer's card through the device to validate the account details. The customer then enters his or her identification number, using the strip display to check that it is correctly entered. The device validates the card and the number.

Datastripe (CW), 491-493 London Road, Camberley, Surrey. Tel: (0276) 682921.

Digitiser family

GTCC Corporation, of Rockville, Maryland, has appointed Dicoll Electronics, of Basingstoke, as UK distributor of its Digi-Pad 5 family of digitisers and the Graphic Analysis Package 1 (GAP-1) for the IBM Personal Computer.

The digitisers, which are supplied to OEMs and end users, are based on the concept of using a single-board microprocessor-based controller which is functionally compatible with a large variety of tablet sizes. All use the identical controller and the same interface.

Another advantage is that software written for one size of digitiser can be used for any size tablet ranging from 6in x 6in up to 42in x 60in.

Dicoll Electronics (CW), Bond Close, Kingsland Estate, Basingstoke, Hants. RG24 0QB. Tel: Basingstoke 61551.

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CONTRACTS

Systems and Programming

OVERSEAS ASSIGNMENTS

UNIVAC 1100 EXEC 8 - USA/Europe/M. East
UNIVAC 1100 DMS TIP - USA/Europe/M. East
BURROUGHS MEDIUM RANGE - USA/Europe/M. East

Project Leaders UNIVAC 1100 EXEC 8 experience.
Systems Analyst Burroughs medium range or UNIVAC 1100
experience. Ref: Suzanne 1040

Programmers With UNIVAC 1100 DMS TIP
experience. Ref: Suzanne 1015

Datapoint - Europe
Programmers required for conversion from DOS to RMS to take place in
several cities over Europe. Ref: Suzanne 1033

Honeywell L6 - Netherlands
Programmers required for two projects. (One lasting two months the
other 3/4 months. Start date May). Ref: Suzanne 1021

IBM 3270 Analyst Programmer - Brussels
IBM RAMIS ASSEMBLER experience to work on DOS to MVS conversion. 2 year
start date July for 3/6 months. Ref: Suzanne 1042

IBM MVS Systems Programmer - Brussels
Experience of JES 2, AC/VTAM, VSAM, TSO/SPF, SMP desirable. 2 year
contract. Ref: Suzanne 1041

IBM SYSTEM 23/BASIC - Holland
Design/Lead Programmer required from mid May for 3-4 months to
work on a new materials management system. Good experience of
System 23/BASIC needed. Ref: Elaine 1011

BURROUGHS/COBOL/LINC - France
Project Manager required with experience of LINC and COBOL together
with fluency in business French to work on this potentially long term
contract (18 months - 2 years). Ref: Elaine 1011

SEL 32/MPX 32/ASSEMBLER/FORTRAN - Belgium
Analyst/Programmers required for initial 6 months contract with good
experience of above mentioned skills. Will be working on a Datapoint
handler. Ref: Elaine 821

U.K. ASSIGNMENTS

IBM 4341 or IBM 8100 Experience - London
Team Leader to Manage a team of 10 people, standards and procedures
are important. Ref: Bridget 1004

Data General/Hewlett Packard/ICL - London
Consultant Analyst/Senior Analyst Programmer to join professional team
developing variety of business systems. Successful candidate will be
responsible for developing and implementing mini and micro systems.
Start Date Mid/End May duration of 1 year. Ref: Suzanne 1016

Univac 90/30 DMS TIP - Herts
Programmer required as soon as possible. Duration indefinite. Ref: Suzanne 1000

VAX/VMS/PASCAL or BLISS - West of London
2-4 Programmers required A.S.A.P. with experience of VAX/VMS or PDP
11/RX11 using PASCAL, BLISS or BCPL. Contract duration is 4 months. Ref: Elaine 1039

MOTOROLA 6809 - Bedfordshire
Programmer required A.S.A.P. for 4-5 months to work on a point of sale
system. Must have experience of 6809 ASSEMBLER and PASCAL. Ref: Elaine 1001

CORAL 66/PASCAL - INTEL/PDP - North West England
Various levels of expertise required for 4-6 month contracts to start
immediately. Real time experience is essential and a knowledge of
messages switching and MASCOF advantageous. Ref: Elaine 1001

ICL 2900 VMEB TP and TPMS - Newcastle/Hants
Project Managers and Senior Project Manager required for contracts
starting in May and June. Duration 6 months +. Ref: Suzanne 1030/2

Micro - DRS Range/Philips P3500 - West Midlands
Programmers urgently required for new developments and maintenance
systems. Good CP/M people are welcome. Immediate start. Duration
3 months +. Ref: Suzanne 1029

Fortran Programmer - Oxfordshire
Preferably with three years post graduate experience in process control,
graphics, mini computer file handling. Will be using plot 10 graphics
package. Start date ASAP, duration 3/4 months. Ref: Suzanne 1038

IBM 8100 Programmers - London & N. England
Ref: Bridget 1010

ICL ME 29 Programmers - Midlands
Ref: Bridget 1028

ICL 2900 VME COBOL IDMSX - London & Midlands
Programmers - London & Midlands
Ref: Bridget 1027/943

IBM 4341 COBOL OS TSO JCL - Surrey
Programmers - Surrey
Ref: Bridget 1035

OPERATIONS

Contract and Permanent

IBM 4331 - OS/VS1 VM IMS - Herts
Operator
This position requires a flexible individual with a minimum of 9 months OS/VS1 experience to work 2 shifts
within a fairly progressive site. Ref: OPS 1107

IBM SYSTEM 3/15D + SYSTEM 38 - N. London
Senior Operator
A person with a solid System 3 background and a professional manner will progress onto the System 38. Good
appearance and a slightly extrovert personality will secure a position working 3 shifts and offering excellent
perks, including Mortgage Subsidy. Ref: OPS 1108

NETWORK SUPPORT - City
This position requires a sound Data Communications background consisting of at least one years experience
with the support of a remote network, essentially DOS CICS VM CMS BSC Protocol and Rascal Milgo models. To
work for a large international concern offering Mortgage Subsidy and other excellent perks. Ref: OPS 1109

IBM 4341 - VM DOS/VSE CICS - City
Operators
Two years experience of the above is required for this TP based installation offering good prospects and benefits
including Mortgage Subsidy. Ref: OPS 1110

MINI OPERATOR/CONTROLLER - S.W. London
A person with good mini experience and the ability to work without supervision is required to set up and run a
Hewlett Packard. An account background would be an advantage. Ref: OPS 1111

CONTRACT - Hants
IBM 4331 - MVS JES2
Senior Operator
You will have an in-depth knowledge of MVS JES2, ICL and Utilities, TSO/SPFVTAM and CICS. To start in June for
a minimum of six months; Assisting with conversion and training of staff. Ref: C7

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Experience of CAD/CAM or Graphics essential: main equipment currently utilised includes Hewlett Packard 1000 systems under RTE. VAX 11/750 under VMS: main language is Fortran 77 - Assembler experience would be preferred.

Electronic Systems

Experience on real-time systems: and in design analysis is essential: main equipment includes Hewlett Packard 1000 systems under RTE - and microprocessors include Intel 8085 and Texas 9900 series. Candidates must be familiar with a structured high level language such as Coral 66 or Pascal.

Software Validation

Applicants for this area should be interested in specialising in software validation, structuring and quality assurance procedures: in-depth experience of microprocessor systems and hardware must be coupled with a knowledge of detailed software structuring and software validation and analysis techniques; the ability to liaise closely with systems design engineers, systems analysts and programmers is essential. Salaries will be most competitive - and benefits are good. The experience and prospects available will be first class. Please write with full c.v. to Miss F T Cox, Personnel Officer, Westinghouse Signals, PO Box 79, Foundry Lane, Chippengham, Wiltshire SN15 1JD. Telephone (0249) 654141.

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LONDON AND HOME COUNTIES

INTERNATIONAL FINANCE

PROGRAMMER/ANALYSTS £11,000
The world of computer programming is developing rapidly. Can you develop your COBOL/CICS skills as fast? If you can offer a minimum of 2 years solid IBM COBOL, preferably in a financial environment, and would like the opportunity to become involved in on-line system development, then this "blue chip" company can offer you unlimited career progression.

INTERNATIONAL COMPANY

SOFTWARE SUPPORT £20,000
This international company, already marketing and supporting several well known software products, require a number of technically minded professionals to supplement their support team. In-depth knowledge of MVS and TSC, coupled with a solid CICS or IMS background, will secure you a very rewarding future with the opportunity for international travel.

INTERNATIONAL OIL COMPANY

PROGRAMMERS/PROG/ANALYSTS £11,000
A major oil concern with a development schedule planned well into the late 80's requires several PL/1 and COBOL Programmers and Analysts/Programmers to help create a new team. You will be working in an IMS DB/DC environment, so any on-line and/or Database exposure will be advantageous.

INVESTMENT PLANS AND TRUSTS

SENIOR ANALYST/PROGRAMMER £13,000
Our clients require a senior member for a team heavily involved in the development of on-line financial systems. Experience in lending terms, together with the design and implementation of CICS-COBOL based systems is sought and progression to management positions envisaged for the successful applicant.

SOFTWARE HOUSE

PROGRAMMERS £10,000
Programmers with a good knowledge of commercial applications and a mature outlook are required by a well known software house with offices in London and Surrey. Working within a small team with client and user contact at all levels on DEC and VAX, you will find this company can offer you the opportunities and experience that you perhaps lack in your present post. A biannual salary review is just one of the benefits along with a truly negotiable salary.

REQUIRE MORE ANALYSIS?

ANALYST PROGRAMMER £10,000
A leading LIFE INSURANCE COMPANY urgently needs to recruit an ANALYST PROGRAMMER to augment an existing team. Working in COBOL on ICL2900 and 1900 under DMS and VME with perhaps some systems experience, the candidate will need to demonstrate a background in solid analytical work with at least four years overall D.P. experience. This post will involve some programming. Flexitime, Xmas bonus, free lunches are just some of the benefits.

MANUFACTURING

SENIOR PROGRAMMER £10,000
A well known Kent based company using both ICL 2900 and H.P. kit are currently seeking to fill this vacancy. A solid programming background covering the full range of commercial applications is needed. This may be a very good career opportunity for candidates considering their next move. Relocation expenses could be offered.

VAX/VMS OPPORTUNITY

SENIOR SYSTEMS PROGRAMMER £18K-20K
Conversion work, de-bugging, monitor work, client support, training, system maintenance. These are some of the areas of work that you will be involved in. All work is on DEC kit with the main emphasis on VAX under VMS. For further details please contact us at the earliest opportunity.

STOP PRESS: LONDON, 2 Programmers, RPGII, COBOL, commercial background. £8,500-8,500.

MIDLANDS

G S D CONSULTANCY

ALL LEVELS £10-14,000
Excellent opportunities exist for Analyst/Programmers and Project Leaders within this specialist consultancy. The company develops commercial applications software for IBM S34 and S36 users and have a remarkably successful track record in their field. Good RPGII or PL experience is needed, coupled with solid analysis skills and team leadership for the more senior positions.

MAJOR FINANCIAL CONCERN

COBOL PROGRAMMERS £9,000
One of the largest financial houses in the city are currently looking for programmers with about 18 months COBOL experience gained in an IBM environment. They can offer a great deal of development work, with the possibility of on-line and database involvement. Company benefits include interest free loans and relocation expenses where applicable.

EXCELLENT BENEFITS package

SENIOR PROGRAMMERS £10,000
Due to major development project our clients require experienced PL/1 programming staff with an IBM OS or MVS background. The company offers very good scope for personal progression together with a benefits package that includes MORTGAGE ASSISTANCE and RELOCATION where appropriate.

OPPORTUNITIES FOR ANALYSTS

SENIOR SYSTEMS ANALYSTS £15,000
A number of city-based clients are looking for senior staff currently. Finance systems orientated, candidates must be able to offer a good track record in designing and implementing on-line/database systems on IBM equipment. Opportunities are available in INSURANCE, BANKING and BROKING.

DATABASE PROGRAMMING

SENIOR PROGRAMMER £10,000
We are looking for someone with sound Sperry Univac experience, either on the 1100 series machine or the V77 series. The company are multi-national and committed to a large development program. The position is very responsible and is the first step in the company's senior management ladder.

PROGRAMMER

CIS-COBOL £5,000
We are looking for someone with 1-2 years experience of CIS-COBOL, on either PCL hardware or DRS hardware. A high negotiable salary is provided, with the opportunity for travel.

MANUFACTURING

SENIOR PROGRAMMER £10,000
Our clients are a large manufacturing organisation and are looking for a senior COBOL programmer to lead a team of 4-5 people. The installation is an IBM 3031, using IMS utilities. 3-4 years experience in a manufacturing or business background is ideal.

SOUTH AFRICA AND U.K.

PROGRAMMER/ANALYSTS £5,000
A large software group committed to providing bespoke system for first time users have several positions open in their Midlands or London offices as well as in their South African subsidiary. A negotiable salary with car is provided. We are looking for COBOL or BASIC programmers, with experience of Mini-computers, such as WANG, Texas Instruments, CMC, Data General or Univac.

If you are unable to contact us during office hours but would like to discuss your future with one of our consultants, phone 0787 280748 or 01-986 3818 during the evening or at weekends.

MANAGEMENT & EXECUTIVE SELECTION

telephone
01-637 9611

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for Micro Computer Leaders
Cambridge

Are you the young, business orientated systems designer, who can successfully pilot innovative project development?

An exceptional company requires an exceptional individual combining R&D experience, communication skills, ambition and the ability to motivate.

Salary and excellent company benefits will reflect the importance of the position.

Software Designers

Wiltshire & Home Counties

Our client requires creative individuals to expand their design group.

New development opportunities include involvement with the latest microprocessor technology, including Pixel, Graphics, Unix 'C', Motorola 68000, CPM/M plus local area networks.

These opportunities and an excellent career path are open to applicants at all levels who have Assembler experience.

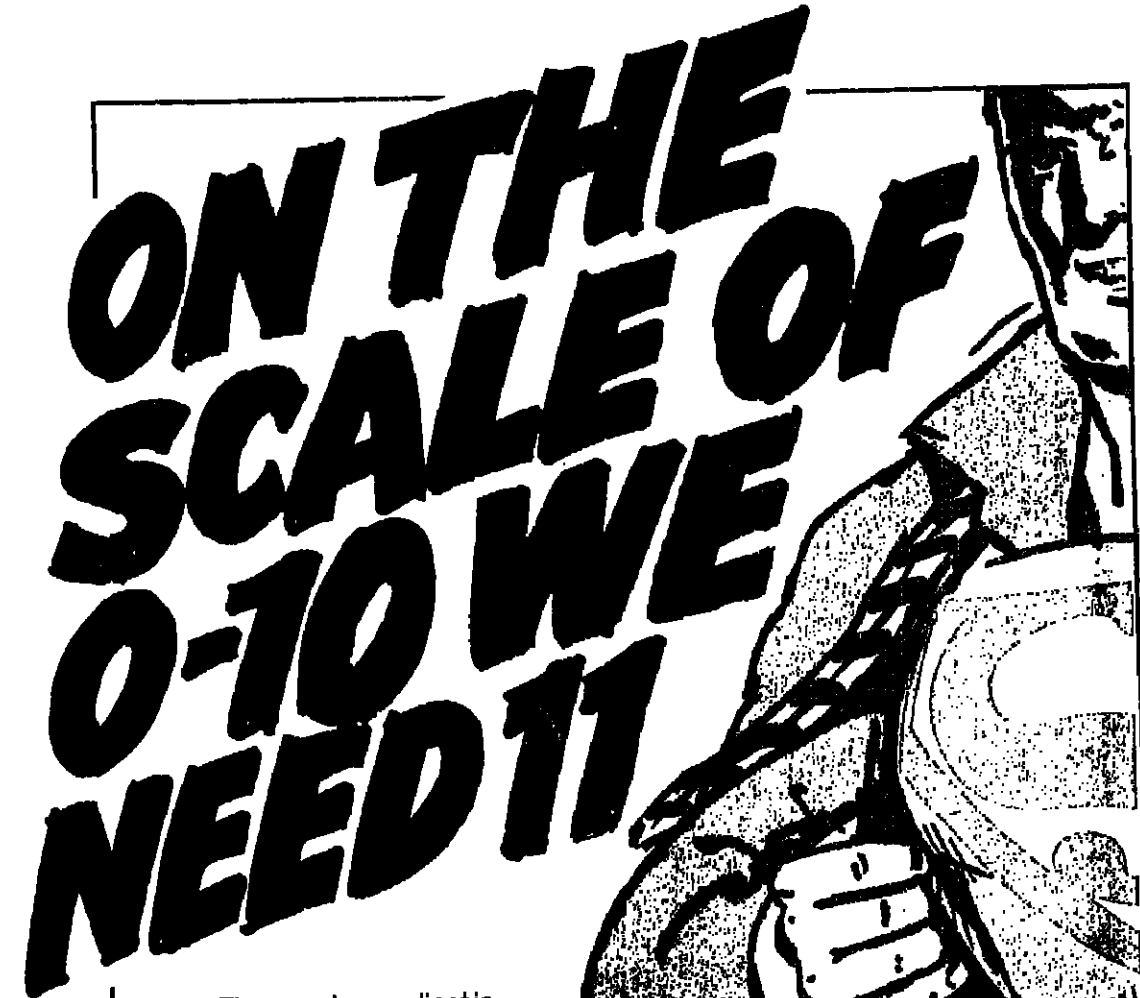
Salaries are negotiable and relocation paid where applicable.

For further details contact Karen Whelan on 01-637 9611.

Suite 201/6 Albany House

MANAGEMENT &

324 Regent Street London W1 EXECUTIVE SELECTION



The people our client is seeking will score ten by having the ability and experience to analyse problems and develop cost effective solutions. However they must also have the breadth of vision to appreciate the ways in which technological developments can be used to meet not only the current but also the future business needs of the company, and therefore continue up the scale.

The three outstanding opportunities will be taken by graduates whose background meets the experience requirements and who have the ability to communicate their ideas and show a potential to move into management.

COMMUNICATIONS

The experience required is a minimum of 5 years which should include multi-site data and voice communications. An IBM user background with experience of SNA (VTAM, NCP) on MVS or DOS systems is essential and previous experience of network design and implementation would be ideal.

DATABASE

This position would suit an IBM Systems Programmer with 5 years experience and at least 2 years experience of MVS DL1 in a support or design role.

OFFICE AUTOMATION

We would like to talk to a Senior Analyst/Programmer with a background of at least 5 years business systems experience on mainframes and the application of minicomputers, micro's and word processing in an office environment.

Our Client is a well-known, highly regarded British Company with a considerable investment in computer systems. They will provide an attractive remuneration package which will include salaries of up to £16,500 p.a., BUPA share option and bonus schemes (after a qualifying period), contributory pension and a subsidised restaurant.

The positions will be based in Central London and relocation assistance will be available if appropriate.

To find out more about these exciting opportunities to push your career further up the scale, telephone now or send the coupon below and we will forward an Application Form and a comprehensive Company Profile.

Please send an Application Form and Company Profile to: 0489

Position applied for: _____

Surname: _____ First names: _____

Full address: _____

Home tel: _____ Work tel: _____ Ext: _____

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PROJECT LEADER

SYSTEMS ANALYST

CHELTENHAM

Spirax Sarco Ltd. is an International Company based in Cheltenham and is market leader in the field of Energy Saving Control Equipment for steam water and compressed air services.

We will shortly be commencing an extensive programme of computer systems implementation in Sales, Financial and Manufacturing application areas. In the main, systems will be based on computer software application package solutions. The following vacancies have arisen:

PROJECT LEADER

We require a Project Leader with the ability to head up a small team of data processing specialists and user department personnel, to be engaged initially in the Sales Order Processing and Accounting areas.

Applicants should have had at least four years' data processing experience at either Project Leader or Business/Systems Analyst level, dealing with commercial type applications.

We are looking for someone aged between 30-35 with a proven track record of successful computer systems implementation.

SYSTEMS ANALYST

To work as part of the Project Team concentrating on manufacturing systems, we require a Systems Analyst with a minimum of three years' experience, preferably with some programming background.

Applicants should have experience of all phases of computer systems project development, especially in the design and implementation of commercial systems. Preferred age is 28-35.

Attractive salaries will be linked to age and experience and there are additional fringe benefits in keeping with a progressive company, including non-contributory pension scheme and BUPA membership.

Please apply in writing, giving details of career to date to:

Computer Systems Manager
Spirax Sarco Ltd.
Charlton House
Cheltenham GL53 9ER

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Analyst on IBM System 34 with 3 years prog/anal on minis/micros. Supervision and travel. International company - Middlesex. £12,000.
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Executive Selection
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... In the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting contract assignments. Our current requirements include analyst/programmers with:

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UNIVAC 1100

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With exciting new products being launched, they now seek experienced and professional sales executives to promote a wide and competitively priced range of equipment in the Midlands and South.

To take full advantage of the outstanding career opportunities you must be able to demonstrate a highly successful track record, ideally gained in the peripheral OEM market place.

If you are successful and plan to grow, our client offers high basic salaries, realistic targets and an executive car along with the security of a non-contributory pension scheme and permanent health insurance.

For further details please telephone Maidenhead (0628) 74274 or write in confidence to, Charvil Lewis International, 27 Marlow Road, Maidenhead, Berkshire.

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This organisation, the autonomous subsidiary of a Major International Corporation, is seeking to appoint additional SOFTWARE SUPPORT SPECIALISTS to back an ambitious European marketing program for high performance mini-microcomputer products.

Sound hardware and proven commercial application software, running under the PICK operating system, make this an outstandingly versatile computer package.

Ideally you will be a mature software professional with mini computer industry experience, a knowledge of the PICK operating system and the personality to support a dynamic marketing operation.

All positions are UK based, close to LONDON and some will involve European travel. Rewards from base salary, bonus, car plus other large company benefits are excellent and totally commensurate with the importance attached to these key positions.

Telephone DOUG SNEDDON or JOHN WILLS at I.M.P.C. on 01-486-5644 for an informed discussion.



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ICL • COBOL • ME29 • TME • IDMS
£10,000-£16,000

Project Manager

With strong technical background. Must be capable of pre- and post-sales support activity without assistance.

Support Technicians

Ability to provide demonstrations of product to prospects. Implement product on customer site and offer subsequent support.

Design Consultant

Capable of interfacing software products to ME29, in depth technical knowledge required. Experience of ICL cash recycling, terminals an advantage.

DEC • VAX • VMS • BASIC + 2
£7,250-£14,000

Senior Consultant

Ability to co-ordinate program development, system testing and documentation.

Programmer/Senior Programmer

Within our command control and communications division we are seeking to recruit a graduate programmer or senior programmer (maths/physics degree) with graphics knowledge.

Programmers

To join our development team. Minimum of two years' experience.

SYSTEMS PROGRAMMERS/
CONSULTANTS £9-£12,000

Applicants should have:
At least four years' systems programming experience. Real-time operating systems experience. Assembler and preferably COBOL. Knowledge of Ferranti Argus would be ideal but not essential.

PRINCIPAL CONSULTANTS £11,000+

These posts require experience of pre-sales activity and the ability to accept responsibility for major projects from initial customer negotiations, through implementation to final acceptance.

Applicants should have:
At least eight years' experience. Project Management and leadership experience. Real-time systems experience. Experience of working within fixed price contracts.

GRADUATE PROGRAMMER £7,000+

Maths/Physics Degree. At least two years' experience. Graphics knowledge.

All the posts are permanent. The package includes a profit sharing scheme, free lunches and a subsidised pension and permanent health scheme.

Apply in writing to Mrs P. M. Moir, Personnel Officer, Leasco Software Limited, 150-152 Bath Road, Maidenhead, Berkshire SL6 4LD, or telephone (0628) 23391 for further details.

Leasco
SOFTWARE LIMITED

COMPUTER OPERATIONS SUPPORT ANALYSTS

Britoil is a resourceful and energetic company in North Sea oil exploration and production, and as projects become more complex so the role of operations support becomes more critical.

Our Glasgow-based Information Technology Department, which employs some 170 skilled staff, is the focal point of our computer network serving the Company throughout the UK.

Information Technology Department is centred on an IBM 3033N, running OS/MVS/JES2 with ACF2, HSM, and TSO/SPF. Last year saw the installation of a 3850 Mass Storage System, with plans to include installing 3380 disk drives.

We are seeking Support Analysts with experience in an IBM operations environment, who have a good working knowledge of JCL, TSO and utilities. Programming experience would be an added advantage.

Specific duties will be to:
• Provide technical assistance to users.
• Evaluate new

products from an operations viewpoint.

• Ensure standards for JCL, PROCS and Operation manuals are maintained.
• Provide Space Management functions using HSM and FDR.

• Improve existing and implement new systems.
• Write JCL and operational documentation.

In addition to the obvious scope and challenge of the job, Information Technology Department provides a comprehensive training programme of courses to help keep employees abreast of the latest technical and software developments. We offer competitive salary and benefits package, which includes (where appropriate) generous assistance with relocation.

Detailed cv's should be submitted to:
Bob Evans, Senior Personnel Officer,
Britoil plc, 150 St. Vincent Street,
Glasgow G2 5LJ, quoting
ref. COSA/RWE/CW.
These posts are open to
men and women.

Britoil

The Polytechnic of North London

GRAPHICS ADVISER

There is a vacancy for a Graphics Adviser in the Polytechnic Computing Service to promote the wider use of computer graphics facilities throughout the Polytechnic. Experience with using interactive graphics is essential, together with an interest in developing software to support existing packages. The principal responsibility is to advise users on applications and assist them in implementation.

The Computing Service offers a wide range of facilities, based on a Dec System 10, a VAX 11/780 and over 50 microcomputers. Applicants must be graduates or equivalent professional status with at least one year's solid programming experience, preferably in Pascal, Fortran or Basic.

Salary scale: £5,498-£7,184 inclusive of London Allowance.

Commencing salary in accordance with qualifications and experience.

For further details and application form please apply to Peter Jefferys, Head of Computing Services, Polytechnic of North London, Stephenson House, Holloway NW 20B. Tel: 077 2326. Ext. 2205.

(2841)

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The person appointed will take charge of the subject and be responsible for its organisation throughout the school. Scale 2.

Application forms, to be returned by 18th May, 1983, obtainable on receipt of a stamped, addressed, foolscap envelope from the District Education Officer, District Education Office, Pontmorlais, Merthyr Tydfil.

Convenancing will disqualify.

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Director of Education

(3851)

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Excellent prospects in an attractive location for high profile positions.

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Your experience in a communications environment could include * manufacturing * design (modem/analogue/digital/mpu) * technical support.

Excellent career prospects in a dynamic team.

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Scientific Progs/Designers

E.E.C.: Pkg to £16K

A leading international Systems House and consultancy currently requires additional Scientific Programmers and Software Designers for permanent career positions in Holland and Germany. Suitable applicants will be graduates with between two and five years' industrial experience in a real-time microcomputer or microprocessor environment. Your programming skills should include fluency in at least one high-level language preferably FORTRAN, COBOL or PASCAL and, additionally, an Assembler. Particular hardware experience is not important, but knowledge of PDP-11 VAX, C, Lincos or Motorola 6800/68000 would be a distinct advantage. For the Software Designer positions, applicants will be expected to offer knowledge of Data Communications, Networking Systems (LANs or WANs) and Control.

C & UNIX Programmers

London: Salaries to £10K

A highly respected Product Supplier is currently seeking to recruit several Systems and Applications Programmers to work on its UNIX-based range of products. Applicants, aged 22-26 years, should have graduated since 1980 with a good class honours degree in a numerate subject and have at least one year's commercial or industrial experience. Very recent M.Sc. or Ph.D. candidates are also encouraged to apply, particularly if their chosen subject matter was directly concerned with UNIX systems software. It is advantageous to be fluent in C programming language and also offer PASCAL as a secondary language. Whilst the majority of programming work is undertaken in-house, candidates will be expected to work on clients' sites both before or during the implementation phase.

Ref: L/18/B

Systems Designers Project Ldrs./Programmers

Southern Home Counties: Salaries to £15K

Our Client is a Systems and Software House with a well-deserved reputation for developing software and systems, engineered and packaged to the highest standards. A series of newly-won contracts has given rise to a number of vacancies for Systems Software Professionals able to deliver elegant and efficient solutions to extremely challenging problems.

For all applicants a good Honours Degree in Computer Science or a related discipline, supplemented by at least two years' experience in an industrial real-time environment is an essential requirement. Such experience will preferably include participation in the design and implementation of complex technical or systems software. Specific language skills should include fluency in FORTRAN and PASCAL, C or ALGOL supported by substantial Assembler usage. Candidates for the more senior positions must be able to show that they have the ability to lead a small team of Programmers and Designers through all phases of a Project from original Outline Specification to implementation and customer acceptance.

Current applications areas include communications networks, interactive terminal systems, graphics and on-line reservation systems. Experience in any of these fields will, therefore, be welcomed and will attract a salary premium.

Individuals who feel they meet the stringent requirements outlined above should either forward a well-documented resume to our offices or telephone one of our Consultants quoting Ref: AS/1.

Operational Analysts

London: Salary to £13.5K

A number of Operational Analysts are required by this London based Consultancy. Academically, you should hold at least a first or second class B.Sc. Degree in Mathematics, Physics or Statistics. An M.Sc. or Ph.D. in these subjects and the ability to communicate. Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas: war gaming and scenario studies, mathematical programming and analytical modelling, navigation systems assessments, reliability studies and data reduction. An important feature of these positions is the ability to communicate software and O.R. techniques to non-technically minded personnel. There will also be a degree of travel to clients' sites.

Ref: L/18/C

Software Development

Berkshire: Salaries to £14K

An international manufacturer and supplier of hardware and turnkey systems has budgeted to augment significantly its professional and technical personnel during 1983. Consequently, a number of outstanding opportunities exist for Software Development Engineers and Systems Implementation Consultants. Your academic and work experience must include a good class B.Sc. degree and at least 18 months' software engineering experience where office automation products are under development. In particular, your software and systems skills must have been acquired within the following areas of activity: man/machine interfacing, local and wide area networks, word processing, and electronic mail/filing applications. Programming skills should preferably include fluency in a high level block structured language and an Assembler as a secondary skill.

Ref: L/18/D

Expert Systems

Thames Valley: Salaries to £14K

Our Client's Research Centre, established in 1976, has recently taken additional premises in the Reading area. An immediate requirement exists for personnel to participate in the development of the Company's range of products and services. You are probably employed as a Systems Programmer, Designer or Consultant and have a minimum of B.Sc. degree in a numerate subject. Those who hold an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with some relevant industrial or commercial exposure. The Company's specialist areas of activity demand that all potential employees have an in-depth knowledge of two or more of: artificial intelligence, cybernetics, knowledge engineering, robotics, process and control engineering.

Ref: L/18/E

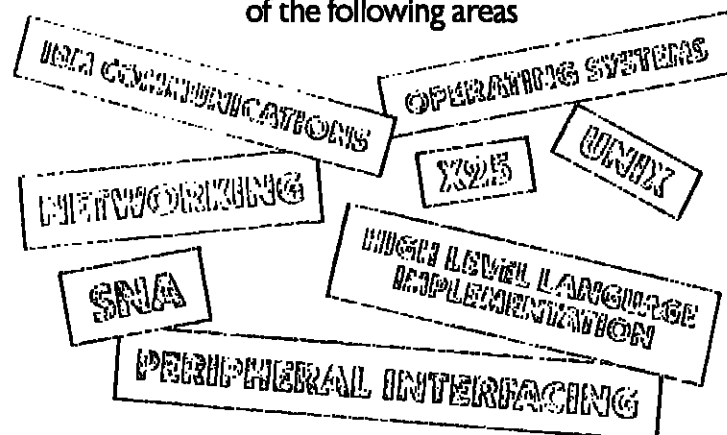
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Hardware and Software Development Hertfordshire

This is your opportunity to join one of the industry's success stories. As part of a \$3 billion turnover multinational corporation, their commitment to research and development in Telecommunications, Distributed Data Processing and Electronic Office Systems is assured. Innovative thinking, coupled with a sound marketing policy for their state of the art products, has created considerable expansion in the areas of hardware and software development. You will be working in a progressive and highly stimulating environment, where career opportunities can be realised together with all the benefits expected of a major company, including relocation assistance. Interested? Then ring **Barbara Basquill** on the office number or alternatively call her on **0787 237116** outside working hours for a confidential discussion and an immediate interview.

**Development Programmers
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Project Leaders
Team Leaders
Diagnostic Programmers
Support Engineers**

with experience in one or more of the following areas



WARWICK WOODWARD  A SPAN GROUP COMPANY
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TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

SENIOR ANALYST/PROGRAMMERS c£12,500 BURROUGHS/FINANCIAL

Due to internal promotion this C. London-based financial concern requires an experienced Analyst/Programmer. Applicants should have four-five years' DP experience which must include exposure to either financial applications or Burroughs systems and software. The successful candidate will have leadership potential as career progression is assured. As well as an excellent starting salary, a full range of banking benefits is offered.

ANALYST/PROGRAMMERS to £11,500 BURROUGHS COBOL

C. London-based company is currently seeking Analyst/Programmers at various levels to complement their successful team. Applicants should have a minimum of 18 months' COBOL, preferably gained on BURROUGHS CMS systems, however a good financial/commercial background will be considered. Candidates can expect a good deal of client contact and must therefore be professional in appearance and attitude. Good prospects and working conditions.

SALES SUPPORT £NEG + CAR C. LONDON

Two well-known manufacturers require experienced DP personnel to join their sales support teams. There are both junior and senior positions available. For the junior posts, applicants should have around 18 months' commercial programming experience and have the desire to move into a sales-oriented role. The senior positions demand that candidates have a sound DP background to include some sales support exposure. Both companies offer excellent packages and career prospects.

PROGRAMMERS COBOL £9,500 + Mort.

A well-known bank based in the City is currently expanding its systems development division and wishes to recruit programmers with at least one year's COBOL, preferably in an IBM online environment. They will offer full training in Banking discipline and CICS where necessary. The career path will involve quick progression through to systems. Standard banking benefits apply to include a subsidised mortgage.

ANALYST/PROGRAMMER RPGII £10,500

Management services division of a major manufacturing concern has a vacancy for an experienced analyst/programmer. Candidates should have a minimum of two years' RPGII programming in System three or 34 background (any 38 experience would be of special interest). Good User skills are essential since applicants will be communicating with business users who have little technical knowledge. This position is based in West London.

PROGRAMMER RPGIII TRAINING £8,750

North Surrey-based company has identified a requirement for an RPG programmer. They are an established 38-user and have the in-house expertise to give full 38 training to existing RPG programmers. The minimum requirement is at least one-and-a-half years' RPGII, preferably from a 34-environment. As well as full RPGIII training, the client encourages early exposure to systems.

ANALYST/PROGRAMMERS VAX/PDP to £13,000

An International Software House has vacancies at several levels up to Project Leader status for persons with proven financial or banking systems development experience. They require a programming background that includes BASIC or COBOL gained in a DEC environment. In return they can offer the opportunity to be involved in the development and implementation of sophisticated banking systems based on the latest VAX and PDP equipment for a rapidly expanding client base and will reward appropriately.

SENIOR ANALYST ICL/BANKING £NEG

A City-based merchant bank, utilising large ICL 2900 equipment for major systems development, requires an experienced Analyst for 'front line' project work. Ideally, candidates will have around two or more years formal analysis behind them, gained in a financial environment. Any financial modelling experience would be of special interest. Salary offered will be entirely relevant to experience and full banking benefits, including mortgage subsidy are available.

ANALYST/PROGRAMMER RSX11M to £12,000 + Mort.

A major international bank requires a further Analyst/Programmer to augment their support team. They are seeking persons with two or more years RSX11M experience and a good working knowledge of MACRO11. Any exposure to datacomms would be advantageous. Departmental expansion offers excellent career prospects rewarded by a negotiable salary and supplemented by a full banking benefits package, including relocation where necessary.

404 4821



Apex Computer Recruitment Ltd.
London Office: 59 Gays Inn Road, London WC1X 8TL Tel: 01-404 4821.
Brussels Office: Rue Gotti de Gaimond, 24, Uccle 1180 Brussels. Tel: 010 322 377 4193.

Developments taking place behind these walls could significantly affect your career - if you're interested in data communications.



A whole range of new product ideas are under wraps at CASE, so far in advance of any systems currently available, that we are confident of maintaining our pre-eminent market position. To speed up progress, and explore other areas of potential interest to our company, we are expanding our research and development activity. We currently have openings for **Real Time Programmers, Microprocessor Design Engineers and Technologists** to advance their careers in the following specialisations:

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Statistical Multiplexing
Communication Processors
Network Management
Systems
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Local Area Networks**

If you think that you could contribute to our programme, and you've already gained valuable experience in a related field, we have many advantages to offer you which can't be matched by our competitors. Let us convince you of this. Come to one of the open interview sessions we're holding soon, to discuss our opportunities over a drink.

OPEN EVENINGS

CASE PLC

Caxton Way, Watford
Business Park, Watford.

OPEN DOORS: 4.00pm to 8.00pm
WEDNESDAY 11th May

HEMEL HEMPSTEAD

Hemel Hempstead Moat House
Hotel, Willow Suite,
London Road (A41),
Bourne End, Hemel Hempstead.

4.00pm to 8.00pm
TUESDAY 10th May

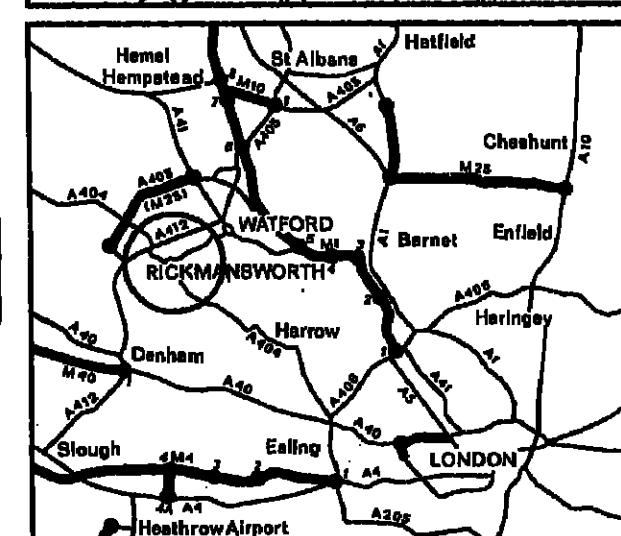
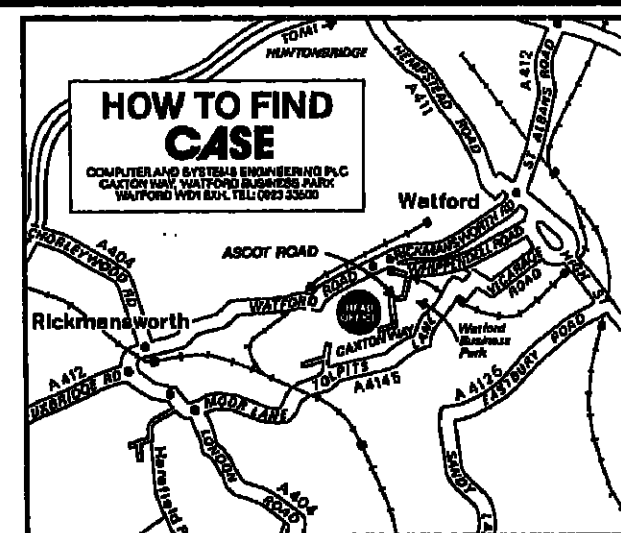
HEATHROW

The Excelsior Heathrow Hotel,
Ambassador Suite,
Bath Road (A4), (opposite
Heathrow Airport).

4.00pm to 8.00pm
MONDAY 9th May

An informal discussion can lose you nothing; a lost opportunity is something you may regret. If you're unable to come and meet us, telephone or write to Maureen Greaves, Personnel Manager:

**Computer and Systems
Engineering PLC, Caxton Way,
Watford Business Park, Watford,
Hertfordshire WD1 8XH.
Tel: (0923) 33500.**



CASE

Apex 150

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London & Berks **USA**
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They currently need to recruit high-calibre people from programmer, analyst to consultant level who will make a positive contribution to their future growth.

Enthusiastic, self-motivated, with a good academic background, you must have at least two years' financial commercial programming experience, preferably with involvement in systems design and implementation. For the senior appointments, a sound knowledge of insurance related systems is essential.

The Company has a policy of providing a continuous programme of career development with regular training and promotion reviews.

For further information telephone or write in strictest confidence quoting ref. no. PC/6345.

**Lloyd Chapman
Associates**
123, New Bond Street, London W1Y 0HR 01-499 7761

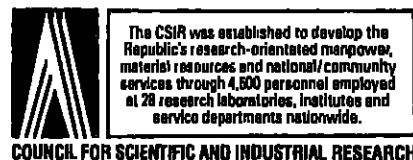
Applied Mathematician

for advanced bridge investigations.

An integral part of the CSIR located on a park-like campus in Pretoria, the National Institute for Transport and Road Research (NITRR) undertakes research programs to find practical solutions to a wide spectrum of problems experienced by all sectors in South Africa in their efforts to finance, plan, design, build and maintain transport systems.

We now seek an Applied Mathematician for a post within our Bridges Group to assist in the extension of our finite element and other programs for bridge design/analysis purposes. These tasks will include the development and application of structural programs on mainframes and minis with the emphasis on interactive mode and computer graphics, involving close collaboration with other engineers.

You should possess a BSc. (Hons.) degree in Applied Mathematics or Computer Science. As a Cypher 750 mainframe and an HP System 1000 mini are constantly utilised, you should also possess a minimum of one year's Fortran programming experience (preferably in bridge design or structural engineering) while any statistics,



computer graphics and interactive operation know-how is highly desirable.

In return the NITRR offers either a 3-year contract (renewable) or permanent post and negotiable salary which, together with South Africa's very high standard of living and the following benefits, constitute an excellent package:

- free air passages to/from the Republic
- assistance with removal costs • settling-in allowance • subsidised housing loan repayment, where appropriate • house purchase scheme after one year's service • annual bonus (13th cheque) • medical aid, pension/life cover schemes • outstanding schooling, shopping and in-house sports/recreational facilities.

Please send comprehensive personal and career details, including phone number, to: The Scientific Counsellor, Chichester House, 278 High Holborn, London WC1V 7HE, quoting reference 11/1/1007 clearly on your envelope.

All interviews will be conducted in the UK soon.

This vacancy is open to members of both sexes regardless of colour, race or creed.

UNIVERSITY OF GLASGOW

(1) CHAIR IN ELECTRONIC SYSTEMS
(2) SECOND CHAIR OF COMPUTING SCIENCE

Applications are invited for two new Chairs as follows:

(1) DEPARTMENT OF ELECTRONICS AND ELECTRICAL ENGINEERING

The successful applicant will be expected to provide academic leadership in research and teaching in Electronic Systems including the introduction of a proposed new Honours Degree Structure in Electronic Systems and Microcomputer Engineering.

The applicant should have worked in Digital Electronic Systems and be conversant with the application of Microcomputers as an integral part of engineering systems; a background of industrial collaboration would be an advantage. The Department has an established reputation for research in the industrial applications of Microcomputing Systems, Control Systems and Pattern Recognition, Integrated Optics and Optical Communications. The person appointed would be expected to complement these activities. (Ref. No. 7873P).

(2) DEPARTMENT OF COMPUTING SCIENCE

The successful applicant will be expected to have experience in some area of computer systems design and implementation. The Department has special interests in software engineering and computer graphics and it is hoped that the applicant will have interests in one of these topics or in a related computer systems area such as distributed processing, process communication or computer architecture. (Ref. No. 7874P).

The appointments will be tenable from 1st October, 1983, or other mutually convenient date.

Further particulars of each post may be obtained from the Secretary of the University Court (Room 16), University of Glasgow, Glasgow G12 8QQ with whom applications (15 copies; one copy from overseas applicants) should be lodged on or before 27th May, 1983. The names of three referees should be given.

In reply please quote the relevant Ref. No. (3801)

NORTH EAST DARLINGTON

Our client, a major manufacturing organisation, is committed to using the latest IBM technology. The Company is soon to upgrade its IBM 4341 running under OS/VS1 with CICS and DLI and a significant expansion of the Computer Services Department is planned. They require:

SENIOR SYSTEMS ANALYSTS

TO £11,000

These posts offer ambitious analysts the opportunity to broaden their experience with involvement in considerable areas of new development work including both local and remote applications. Projects include Manufacturing, Stock Allocation and Warehouse Distribution Systems and the successful candidates will have at least two years systems experience together with the ability to succeed in a highly challenging environment.

PROGRAMMERS

TO £9,000

These posts must appeal to ambitious programmers with at least two years' COBOL programming experience. Career prospects are excellent, offering successful candidates the opportunity to develop their experience in an IBM environment using many of the latest hardware and software aids available.

The company's investment in computing is considerable and increasing and conditions of employment are in line with a highly progressive organisation. Salaries and benefits are first class with generous relocation expenses where appropriate.

For further details and an early interview contact

**NORTHUMBRIAN
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(The North East's Leading
Recruitment Specialists)
12 St Mary's Place
NEWCASTLE UPON TYNE
NE1 7PQ
Tel: 0632-328421/2

(3487)

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Opportunities are now available for strongly motivated and experienced staff to join this expanding company and work in some of the most exciting and rewarding areas of computer science. The company is developing and marketing software products, undertaking project work, and writing and giving training courses. Vacancies now exist for:

PROLOG IMPLEMENTORS

preferably with experience of the internal workings of Prolog interpreters and compilers;

KNOWLEDGE ENGINEERS

preferably with experience of developing expert systems using Prolog;

MARKETING SPECIALIST

with some technical software experience, as well as good marketing skills, to tackle the UK, European, Japanese and USA markets.



Attractive salaries and pleasant conditions are offered in our newly acquired Oxford premises. Oxford itself is a delightful place in which to live, and help will be given with moving expenses where necessary.

Expert Systems Ltd.
34 Alexandra Road, Oxford OX2 0BB. Tel. (0865) 242299

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Continental £30-£36K PLUS per annum

We have immediate and future long term requirements for Software Engineers to join our existing teams designing software for the latest microprocessor-based SPC exchanges in Belgium, Italy and W. Germany.

Candidates should have a minimum of four years' R/T software design experience, preferably telecoms, be familiar with structured top-down methods and experienced in either CHILL, CORAL, PASCAL or similar high-level languages, Intel ASSEMBLER is desirable as well as experience in large telephone systems such as System X.

Application areas include call handling, database, machine interfaces, maintenance and test.

We have a successful 33-year track record in the contract engineering industry throughout the U.S.A. and Europe, performing in excess of £50 million a year in engineering services.

Send CV immediately or telephone quoting ref. H83/14/2.

CONSULTANTS & DESIGNERS (UK) LTD
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(3610)

Sales Executive

Our Client is a well established IBM based Bureau Services Company with a wide range of developed commercial systems and applications, including full SSP control. Specialised skills in the creation of tailored software coupled with tried and tested packages provide the solution to all business requirements. The flexibility of micros linked to the mainframe bureau further widens the range of solutions available to Clients.

You will have a proven track record selling bureau services to commercial users and will wish to be part of a successful computer services Organisation which is committed to the bureau operation with specific growth plans in that area.

For further information contact Clive Wadell on 021-236 3781 (24 hour answering service) or on 021-449 6125 (evenings and weekends).

Specialist Computer Recruitment Ltd
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Area	Salary	Benefits
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Area 2	£12,000 - £14,000	Car, Pension, etc.
Area 3	£14,000 - £16,000	Car, Pension, etc.
Area 4	£16,000 - £18,000	Car, Pension, etc.
Area 5	£18,000 - £20,000	Car, Pension, etc.
Area 6	£20,000 - £22,000	Car, Pension, etc.
Area 7	£22,000 - £24,000	Car, Pension, etc.
Area 8	£24,000 - £26,000	Car, Pension, etc.
Area 9	£26,000 - £28,000	Car, Pension, etc.
Area 10	£28,000 - £30,000	Car, Pension, etc.

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This is a key position with a profitable, well resourced, growth orientated Company. Their marketing strategy is second to none and embraces the leading products, utilising the most advanced ranges of equipment with sophisticated communications links.

You will be able to demonstrate a successful sales career in the computer industry and be capable of senior level negotiations. It would be an advantage if you had experience of volume sales to Local Authorities, Public Utilities and the IBM user base. You will have the desire to achieve personal growth based upon contributing to the success of the Company.

For further information contact Clive Wadell on 021-236 3781 (24 hour answering service) or on 021-449 6125 (evenings and weekends).

Area	Salary	Benefits
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Area 6	£20,000 - £22,000	Car, Pension, etc.
Area 7	£22,000 - £24,000	Car, Pension, etc.
Area 8	£24,000 - £26,000	Car, Pension, etc.
Area 9	£26,000 - £28,000	Car, Pension, etc.
Area 10	£28,000 - £30,000	Car, Pension, etc.

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Our Clients supply and support the Sirius and Altos which are acknowledged by many as the world's leading stand-alone and multi user/multi tasking micro-computers. The product range has been further enhanced by their recent appointment as dealers for the IBM PC. Application systems from Pegasus and Peachtree include Financial Planning, WP, Management Information and Accounting Systems. The Company operates from prestigious city centre offices in both locations.

You will have a successful record selling computer based business solutions. You should be prepared to commit yourself fully to a challenging role within a professional, well managed Group, which offers genuine opportunities for career development.

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Area	Salary	Benefits
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CONGLETON BOROUGH COUNCIL

Borough Treasurer's Department (Congleton)

PRINCIPAL COMPUTER ASSISTANT (F12)

Grade P01 (4-8): £10,264-£11,960 per annum

Applications are invited from suitable qualified persons with a minimum of 4 years' experience in computing for the above newly created post.

The post holder will be responsible to the First Assistant Treasurer for the efficient operation of the computer section and will play a leading role in the future development of data management within the authority. This successful candidate must be experienced in the C.I.L. range COBOL, RPG II, and possess skill in systems analysis. An ability to manage staff and liaise with officers from other departments is essential. The Council operates an ICL M16 20 having IBM (A) & TME70 and is linked to an IBM 3031 at Cheshire County Council.

The post carries a casual user car allowance, temporary housing may be available and certain relocation expenses will be paid where appropriate.

FURTHER DETAILS AND APPLICATION FORM FROM THE PERSONNEL SECTION, WESTHILL, MIDDLEWICH ROAD, BANDBACH, CHESHIRE. TEL: 0924-321141/2.

CLOSING DATE MAY 20th, 1983.

(3548)

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Walton-on-Thames (98) 45552
(evenings/weekend)



(3639)

COMPUTER OPERATIONS MANAGEMENT

LEEDS £12,000 + MAJOR BENEFITS

Leeds Permanent is the UK's fourth largest building society with an expanding Management Services Function and a dual IBM 303x installation based in Leeds. The Society has an impressive record of advanced computer system developments including a national on-line system to our branch network. MVS, CICS, SNA components and IBM 3380 disks are installed. Plans include IBM 3083 processors, IDMS data base and expansion of the telecommunications network to over 1500 terminals.

The Society is increasingly reliant upon high availability systems taking full advantage of the latest technology. To meet the challenge of this rapidly changing environment the Society is to expand its management team by the appointment of an OPERATIONS MANAGER.

This important management appointment requires a D.P. operations professional who combines technical awareness with strong leadership skills. Prime responsibility is for assessing the operational implications of new hardware, software, and applications, and maintaining an appropriate computer operations environment. Applicants, who may be either male or female, must have management experience gained in a large computer installation with on-line systems, sound standards and procedures.

BENEFITS

Benefits include concessionary mortgage facilities, contributory pension scheme, free life assurance and sickness schemes, subsidised staff restaurant and Sports and Social Club. Interested applicants should send a full C.V. (quoting reference no. CW5/83) to:

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Enquiries will be treated in the strictest confidence. Envelopes should be marked 'Staff Confidential'.

**the
Leeds
PERMANENT
BUILDING SOCIETY**

Appl no 1514

RPG II Programmer/Analyst

c.£9,000

Abingdon, Oxon

From its establishment as a family business at the turn of the century, our Client has expanded into one of the largest private Companies in Europe, yet still maintains a very personal, "open door" management style. The German Parent Company established its UK operation in 1964 and, eighteen months ago, moved into a brand new, purpose-built Head Office and Distribution Complex, designed to a prestigious specification, in this attractive area of Oxfordshire.

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The ideal applicant will be an experienced RPG II Programmer with the technical skill to take over the bulk of the department's programming activity, whilst possessing the necessary degree of maturity and business awareness to effectively deal with users and

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The Programmer/Analyst can look forward to all-round involvement in a very constructive working atmosphere, where initiative and resourcefulness are actively encouraged, working closely with the DPM in the development of a number of new systems.

In addition to providing a stimulating and satisfying career path, our Client offers an above average working environment, including superbly equipped office accommodation, subsidised staff restaurant, a generous bonus scheme, Company pension scheme with free life assurance and attractive discounts on Company products. Assistance with relocation expenses may also be available, where required.

If you are an experienced RPG II Programmer and seek something rather special in your next move, contact **Carl Ford** on 021-236 3781 (24 hour answering service). Alternatively, contact **Carl** at home on 0562 66585 (Evenings until 9.00 pm and Weekends).

Technical, Sales & Management Appointments

Area	Position	Salary	Benefits	Location
Technical	Programmer/Analyst	c.£9,000	Life Assurance, Pension, Bonus	Abingdon, Oxon
Sales	Sales Representative	c.£12,000	Life Assurance, Pension, Bonus	London
Management	Manager	c.£15,000	Life Assurance, Pension, Bonus	London

Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street,
London W1M 5HS
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061-833 0427

BELGIUM
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COMPUTER SYSTEM MANAGER NEW HP3000 INSTALLATION

J K LASERS LTD is a subsidiary of LUMONICS INC of Ottawa,
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It is intended to install an HP3000 computer using, as a basis, the
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An experienced analyst/programmer is required to implement,
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necessary to operate effectively at all levels of the company, and to
control the total function. At least four years' data processing
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The company recognises the importance of this position and is
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Applications are invited from candidates with varying degrees of
experience to fill both junior and senior posts.

Candidates should be educated to degree standard and have a proven
track record in a combination of the following areas:

- Systems software structures, executives and device drivers
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- A scientific or engineering background as an industrial environment

These opportunities are with a fast growing Division in the field of
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For an application form please ring the Personnel
Department or write to the Personnel Manager enclosing a detailed C.V.

Instrument Limited, Corporation Road, High Wycombe, Bucks. HP12 5BT
Telephone: 0494 3333
Telex: 840000 (open or women may apply)

INSTRON

UNIVERSITY OF ASTON IN BIRMINGHAM 'NEW BLOOD' LECTURESHIPS

The UCC has selected Aston as one of a number of Universities
in which it is funding 'New Blood' initiatives.

Applications are accordingly invited for the following lec-
tureships available from 1 October 1983:

DEPARTMENT OF MECHANICAL ENGINEERING

Application of Microprocessors

The successful candidate would join a small but active team that
has been developing a strong base of capability in the micro-
processor control of electrohydraulic and electrical interface
devices for applying power to a variety of mechanisms.

One aspect of the work would be of interest to Control Engineers
or to either Mechanical or Electrical Engineers who would like to
widen their experience into digital control systems; the other
aspect of the work would be of interest to engineers or physici-
ans with a background of computers or microprocessors, or to
computer scientists, wishing to work on advanced software for
the future control of machinery.

Candidates should normally be aged 36 years or under. The
appointment will be for a period of three years initially with the
possibility of renewal or subsequent transfer to a continuing
appointment. Initial salary will be within and up to the maxi-
mum of the range £8,375 p.a. to £13,505 p.a.

Application forms and further particulars may be obtained from
the Staff Office (quoting Reference No. 552/102), University of
Aston, Birmingham, Gosta Green, Birmingham B4 7ET (Tel.
021-359 3611, ext. 4566). Closing date: 3rd June 1983.

GLC

Working for London

- South Bank Concert Halls - Computer Project Manager

This is a new post, initially to run for eight months, for a
Computer Project Manager to investigate and report on the
feasibility of a computerised system for the Box Office and
related financial and other key functions within the South
Bank Concert Halls.

Salary will be within the range £11,880-£13,353, inclusive
of London Weighting and depending upon qualifications and
experience, pro-rata for 8 months.

We welcome applications from disabled people and all sections
of the community irrespective of an individual's sex, ethnic origin,
colour or sexual orientation.

For further details and an application form, which must be
returned by 27th May 1983, write to the Department for
Recruitment and the Arts, GLC, Greater London Council,
The Concorde Hall, London SE1 7PB, or telephone 01-332 4672.

The GLC is an equal opportunities employer

Programmers On-line customer database system Central London Up to £11K (Under review)

Already among the biggest computer users in Europe, British Telecom is
further strengthening computer capacity to support its expansion in the field
of new customer services.

We are now looking for two Programmers with COBOL experience on IBM
machines - ideally in IBM 4300 series running under VM/CMS - to work with
an on-line customer database system. Both posts are located in Central
London.

Starting salary will be on a scale up to £11K, depending on age and experience,
rising to a maximum of over £13K. Benefits include flexible working hours
and contributory pension scheme, with good prospects for advancement.

For an informal discussion about the work, ring Peter or Randy on 01-432 6064
between 8.30 and 4.00; outside these times there is an answering service on
01-432 9032.

British
TELECOM

Data Processing Executive

Carnation APPLICATION PROGRAMMER Marlow, Bucks C£8-8,500

Due to expansion and the
promotion of the present
postholder Carnation Limited,
one of the world's major
manufacturers of food and pet
products, seeks an Applications
Programmer based at our Head
Office site at Danesfield House,
near Marlow, Bucks.

Candidates, male or female,
must have a minimum of two
years D.P. experience including
at least 18 months applications
programming in COBOL.
Experience relevant to an IBM
4331 running DOS/VSE, CICS
and VSAM will be an advantage.

This is an excellent opportunity
to use both technical programming
and analytical skills with user
contact. Your responsibilities will

include maintaining and
redesigning our existing systems
to meet our demanding
requirements.

In addition to the above salary
(reviewed in December 1983)
benefits include discretionary
bonus, pension scheme, five
weeks holiday, subsidised
restaurant, staff discount and
the opportunity to work in a
magnificent rural setting.
Perhaps most importantly,
Carnation offers long term career
prospects and progression could
include working in systems
development or software support.

If you would like further
information about this excellent
opportunity telephone Mr. Mike
Harmon on Marlow (06284) 6021
or write for an application form to

Peter Hubbard,
Personnel Department,
Carnation Limited,
Danesfield House,
Medmenham,
Marlow,
Bucks SL7 2ES.

Closing date for completed
applications:-
Friday 20th May.



Head of Computing c£16,000 Central London

UNITED KINGDOM CENTRAL COUNCIL
for Nursing, Midwifery and Health Visiting

Our clients are the United Kingdom Central Council for Nursing,
Midwifery and Health Visiting; they are looking to fill the vitally important
position of Head of Computing within a newly created department. The
UKCC and the four National Boards of England, Wales, Scotland and
Northern Ireland are embarking on the computerisation of a single
professional register and index of persons in training which will be the
largest system of its kind in the world.

The person will be highly influential in the formulation and implementation
of computing policy for the UKCC and the Boards and this will require the
following personal and technical attributes.

- * Control ability for a major project
- * Proven man-management ability
- * Demonstrable skills in broad management techniques
- * Knowledge of basic accountancy and statistics
- * A successful career record of similar achievement

The technical environment at UKCC is IBM 3083B and NAS 240H running
under MVS operating under VM. COBOL is used extensively and
ADABAS provides the database management software. NATURAL is also
used in connection with the database, which will be on-line via VDU's.
The development is still in its infancy and there is considerable scope for
the right individual in an exceptionally interesting position within
the organisation.

In the first instance you should apply by telephoning or writing to
Barbara Basquill at the number below, or if it is more convenient
please telephone her on **Great Yeldham (0787) 237116** evenings
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PROGRAMMERS

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Computerplan Software Services has built an enviable client
base within industry, commerce and local government. A
continually increasing demand for the company's products
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highly motivated Analyst/Programmers.

The positions involve providing software support for both
new sales and the development of existing systems.
Therefore experience of commercial application analysis and
programming on mini-computers will be essential. A high
degree of user contact is required and candidates must be
able to demonstrate the ability to communicate at all levels.

As a successful organisation, Computerplan offer excellent
salaries which are in a range of £10-18,000 according to
experience. In addition the company offer exceptional oppor-
tunities to develop a stable career in a stimulating environ-
ment.

LOCATION: WEST MIDDLESEX

JA319/1

Our client, a major manufacturing organisation centred on
the South Coast has established itself as world leader in its
field. Substantial investment in computerisation and contin-
uing development of all control and information systems
have created a requirement for a range of staff at all levels.
Applications are invited from D.P. professionals with expe-
rience in the following areas:

- ★ IBM MAINFRAME
- ★ VM/CMS and DOS/VSE
- ★ COBOL
- ★ ON-LINE DATABASES and
TELECOMMUNICATIONS

In return, the company offers outstanding opportunities for
career development, excellent salaries and a comprehensive
range of benefits which will include a generous relocation
package.

LOCATION: HAMPSHIRE

JA319/2

This position arises within an expanding leasing and fleet
management company in modern offices in the Russell area.
The company, which is part of a major European banking
group, runs a Honeywell Level 82 computer utilising on-line
facilities for enquiry and data capture.

New systems are being designed which provide an excellent
opportunity for someone to join a young department at the
start of exciting software and hardware developments. The
successful candidate must have sound experience in Cobol
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to contribute to this small but demanding team.

Lease Plan will provide a comprehensive package based on
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LOCATION: WEST MIDDLESEX

JA319/3

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facilities to other companies within the group and, on a
rapidly increasing basis, the external market generally.

Situated in pleasant office accommodation in Enfield, we are
able to offer positions to Systems Analysts with a minimum
of eighteen months experience. Candidates should have a
suitable background which will enable them to work on a
variety of commercial systems within a mainly Honeywell
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In addition to competitive starting salaries, we offer five
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JA319/4

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Address.....
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(3191)

IBM Database Specialists

Our Client, a large multi national Group of Companies, is currently investing heavily in large scale IBM mainframes which will replace the bulk of its existing computer hardware.

An integral part of this hardware implementation programme will be the construction of a corporate data model incorporating the setting up of a large Data Dictionary.

In order to complete this process as quickly as possible and thereafter to further expand upon database activities within the Group, our Client wishes to meet with experienced Database Designers and Database Analysts with in-depth experience of the implementation and further development of databases on large IBM configurations.

Attractive five figure salaries are available together with an additional range of benefits which include a company car plan, staff discounts on Company products, a 37 hour working week with 25 days annual holiday, an excellent contributory pension/life assurance scheme, subsidised staff restaurants, active and well equipped sports and social facilities, 24 hour accident insurance, staff incentive scheme and weekend disturbance allowance. Full relocation assistance is available where required.

If you have suitable experience for these positions and wish to find out more, contact **Martin Stainthorpe** at the SCR Birmingham office on **021-238 3781** (24 hour answering service) or at home on **021-744 1868** (Evenings until 9.00 p.m. and Weekends) alternatively, please forward a detailed CV to him at the Birmingham address.

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Manchester M3 2ER
061-833 0427

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Software Professionals

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Racal-Redac Limited has a wealth of experience in the development of Computer Aided Engineering Systems spanning over 17 years. We have consistently been world leaders in this high technology industry, and with over 1000 systems installed, are today the world's leading supplier of CAE systems to the electronics industry. Our range of products from desk-top micro based systems to multi-terminal installations cover application areas such as PCB Design, Logic Simulation and Mechanical Packaging.

We are seeking additional Software Designers who have an Electronic, Computer Science or Science based degree, with at least two years post-graduate experience in a Software environment. Specific vacancies exist for Programmers who will enhance our Project Teams engaged in the development of 5th generation CAE systems and who will be responsible for the analysis, design and programming, using the most advanced computing

techniques in a networked environment. We also wish to appoint Support Programmers who will introduce the System to the customer. This will involve debugging, writing enhancements and product specifications, and advising customers in the post-installation period. Applications from Engineers with a good appreciation of Digital Logic Simulation would be particularly welcome.

These vacancies represent an opportunity to work at the forefront of technology, on tomorrow's CAE systems. In addition to excellent employment conditions, assistance will be provided to relocate to Gloucestershire in appropriate cases.

Please apply in writing with details of qualifications and experience to:
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GENEROUS BANK BENEFITS**

An exciting opportunity currently exists for a Chief Programmer within one of the world's leading foreign banks. They are seeking to recruit an ambitious and enthusiastic person keen to join a professional data processing environment.

The hardware comprises up to date IBM mainframe and mini technology. The following skills are desirable: -

- A sound COBOL programming background
- A knowledge of DL/I
- Some experience in a DOS/VSE environment
- The ability to liaise effectively at all levels
- The ability to both manage and motivate a small team

The successful candidate will be given the opportunity to lead a team of programmers currently engaged upon a range of interesting banking applications.

To learn more about this exciting opportunity, telephone **DP Selection Services** quoting reference: **W5051**.

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SYSTEMS AND PROGRAMMING

HEWLETT PACKARD ANALYST/PROGRAMMER

CITY **£8-12,000 Package**
A city-based organisation requires an analyst/programmer with at least 2 years H.P. Series 3000 experience using S.P.L. or PASCAL. This position might also suit a programmer wishing to progress into an analysis role. Apart from the basic salary an attractive bonus scheme is in operation along with the usual big company benefits. **J.7231**

DATA GENERAL PROGRAMMERS

LONDON **£11,000**
This well-known financial company has two vacancies, for self-motivated people with a minimum of 2 years programming experience, in their progressive D.P. Department. Preference will be given to applicants with degrees and who have experience in COBOL, FORTRAN OR PLI. Some exposure to analysis and mini-computers will be considered advantageous. **J.7276**

DEC SENIOR ANALYST

LONDON **UP TO £10,000**
This centrally located company is looking for a senior analyst with 4/5 years experience of analysis and design work, the last two years of which should have been spent at a senior level, knowledge of RT11 and T&X+ is required and ideally applicants should possess a degree. **J.7266**

WANG PROGRAMMERS

LONDON **£8-10,000**
A programmer and a senior programmer with 2/3 years RPG and 3/4 years COBOL experience respectively, are required by a North London company. Experience of Wang equipment is highly desirable along with a general commercial applications background. Applicants with other mini-computer experience will be considered. **J.7265**

C.M.C. ANALYST/PROGRAMMERS

LONDON **UP TO £9,000**
This company wishes to recruit 2 analyst/programmers ideally with C.M.C. reality experience, however candidates with other mini experience will be considered. These positions will suit self-starters in their late 20's who are keen to work in a progressive commercial environment. **J.7257**

PROGRAMMER

LONDON **UP TO £10,000**
This prestigious company has a current vacancy for a programmer with a minimum of two years BASIC or PASCAL programming experience using micros. Knowledge of Micro-Moseller, Visiolec, Supercalc and Data Base II and/or some accountancy training will be considered advantageous. **J.7265**

PROGRAMMER

SURREY **UP TO £12,000**
This well-known company requires a programmer with good all-round programming experience on Minis/Micros using COBOL or BASIC. A background in communications would be considered advantageous. This position would ideally suit someone in their mid-20's who enjoys user contact. **J.7274**

VAX PROGRAMMERS AND ANALYST/PROGRAMMERS

LONDON **£8-12,000**
Various vacancies exist with this company for people with VAX COBOL experience of which 2 years should have been gained in a commercial environment. Knowledge of Datatrive, Info, F.M.S. and Fortran is highly desirable. **J.7282**

IBM SENIOR SYSTEMS ANALYST

BERKSHIRE **£11,500**
Large company require an analyst with a minimum of 5 years experience, with a good knowledge of CICS working under DOS/VSE. Normal benefits of large company, profit sharing bonus, subsidised restaurant. **R.7273**

IBM SENIOR SYSTEMS PROGRAMMER

HERTFORDSHIRE **£20,000**
Expanding organisation situated close to London has a vacancy for someone with the following experience. Assembler, in-depth knowledge of MVS, CICS, IMS, C11ST, TSO tuning and performance analysis. **R.7225**

IBM SYSTEMS DESIGNER

NORFOLK **£12,000-£15,000**
A very interesting position for an experienced Systems Designer to take full responsibility for all stages of systems analysis, design and implementation. Minimum 4 years experience programming in COBOL and BASIC. **R.7266**

IBM COBOL PROGRAMMERS

VARIOUS **£8,000-£11,000**
A large bureau are looking for a variety of programmers to work in London and the Home Counties. Applicants must have a minimum of 2 years COBOL experience and a good background in Database and Online systems. **R.7278**

ANALYST/PROGRAMMER

SURREY **£NEG.**
Large international company require an analyst/programmer to join a small development team, working on general commercial applications. The minimum requirement is 18 months System 38 and RPG III experience. Capable programmers will be considered for this vacancy. A very attractive package is on offer for the successful applicant. **R.7244**

IBM SENIOR PROGRAMMERS

CENTRAL LONDON **£9,000-£11,000**
A major international banking organisation require two senior programmers to join a small development team, currently implementing a batch information system. Plans for the future will involve the introduction of an on-line system. Minimum 3 years DOS/COBOL/DLI. Usual banking benefits. **R.7280**

IBM PROGRAMMERS AND ANALYST/PROGRAMMERS

S. LONDON **£8,000-£12,000**
A large engineering company require a number of programmers and analysts with varying experience in COBOL, BASIC, A background in communications would be considered advantageous. This position would ideally suit someone in their mid-20's who enjoys user contact. **R.7280**

ICL SYSTEMS ANALYST

W. LONDON **TO £11,000**
Well known company are seeking an experienced Systems Analyst to take a major role within the organisation. The successful applicant will have at least 3 years experience and a knowledge of Payroll and Personnel Systems would be a distinct advantage. **G.7228**

TANDEM PROGRAMMER

LONDON **£10,000**
Financial organisation based in the City wish to recruit an experienced TANDEM Programmer to work in a progressive environment as part of a newly formed team. The position carries considerable benefits and a competitive salary is offered to the right individual. **G.7112**

BURROUGHS PROGRAMMER

LONDON **£8,000-£9,000**
Prestigious West End company is looking for experienced Burroughs people fully conversant with DMS II. Excellent company benefits include BUPA, Interest Free Season Ticket Loan and Contributory Pension. **G.7162**

ICL SYSTEMS PROGRAMMER

W. LONDON **£10,000**
Company with a well known High Street name for supplying luxury goods are looking for one experienced Systems Programmer to develop and maintain the company's computer based administrative systems. Preferably educated to 'A' level standard the right person will enjoy an attractive salary. **G.7180**

ICL SYSTEMS ANALYST

SURREY **£10,000-£11,000**
A Systems Analyst with at least 4 years experience is sought by this organisation. Sound knowledge of Pension systems would be a distinct advantage, however, applicants with a Financial, Accounting background would be considered. **G.7261**

HONEYWELL SENIOR PROGRAMMER

MIDDLESEX **£9,250**
Large well-known organisation wishes to recruit a senior programmer with in-depth knowledge of Honeywell Level 6. A background of production control systems would be a considerable advantage. **G.7166**

HONEYWELL ANALYST PROGRAMMER

LONDON **£8,000-£11,000**
An experienced analyst programmer is required by this company to work on Commercial and Banking applications. SCREENWRITE is essential as is an excellent knowledge of Honeywell Level 6, GCOS. **G.7081**

UNIVAC PROGRAMMERS

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Experienced UNIVAC PROGRAMMERS to work on a variety of projects within a progressive environment. Two years detailed knowledge of COBOL and Database will give the successful applicant a competitive salary and the opportunity to work in a fast moving atmosphere. **G.6978**

FOR FURTHER INFORMATION, PLEASE TELEPHONE 01-439 7871

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Cobol, IMS DB/DC
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IMS/MVS

ICL
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VME 2800, Cobol, IDMSX SCL
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Programmers
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Analyst/Programmers
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London
Essex
Various
Middlesex
West
London
Various
Various
London
West

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Surrey
Surrey
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COBOL/PL1/OS/CICS/IMS to £13K
Commercial H. Counties Midlands - Manchester

ICL/ON-LINE EXP to £12K
COBOL Surrey

HONEYWELL to £12K
Systems Programming experience Middlesex

DATA GENERAL ECLIPSE to £11K
COBOL Leicestershire

IBM/RPG2 to £12K
Financial/Insurance Home Counties

IBM to £16K
System exp Essex

BASIC to £11K
Mini Computers London

IBM/UNIVAC/COBOL to £12K
On-line/Database Surrey

NCR 8200 to £14K
Financial SW LONDON

Analyst/Progs

BURROUGHS/COBOL to £14K
Commercial Surrey

IBM 34/38 to £15K
London/Home Counties/North

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Commercial/Mini experience London

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IBM/BURROUGHS to £15K
Commercial Accountancy London/Surrey/Manchester

IBM SYSTEM 34/38 to £13K
Maapics/Rpg Sussex

ICL/ME29 to £16K
Commercial Design Berks.

IBM SYSTEM 34/38 MAAPICS to £13K
Sussex

Software Engineers

CORAL/PASCAL/MASCOT/C to £13K
Communications Gloucestershire/Sussex/Midlands/Manchester

FORTRAN to £12K
Finite Element/Graphic Display Home Counties

MILITARY SYSTEMS/RADAR to £11K
Coral - Mascot Hants/Surrey - Essex - S. West

PDP/VAX/INTEL to £13K
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COMMS/TELECOMS/MOD to £14K
Mini/Mainframe E. Anglia

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Snr Appointments

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Software capabilities/Technical consultant E. Anglia

Outstanding programming opportunities with Acornsoft

- the software publishing division of Acorn Computers.

We are looking for exceptional programmers to join our rapidly expanding Language Development team in the areas of Systems and Artificial Intelligence. Work will be carried out on 8-bit and, later, on 32-bit microcomputers.

Applicants, ideally with a post-graduate degree, should have had about two years' research experience in systems programming.

The ability to work on a variety of different projects, both

individually and as part of a team, is needed and a knowledge of at least one of the following is essential: Fortran, Prolog, Small Talk, BCPL.

A first-rate, negotiable salary, together with an attractive range of benefits is offered and opportunities for career progression are excellent.

Please write, enclosing a C.V. to: Deborah McGovern, Personnel Officer, Acornsoft Ltd., 4a Market Hill, Cambridge, CB2 3NJ.

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The post is tenable from 1st September 1983.

Salary: LII £7,794 to £11,961 p.a. inclusive of London weighting.

Starting point on grade determined by qualifications and experience.

Application forms and further details from The Chief Administrative Officer (T.O.U.), Ealing College of Higher Education, St Mary's Road, London, W5 5RF.

(3497)

QUEEN ELIZABETH COLLEGE
Kensington
(University of London)

COMPUTER ASSISTED LEARNING OFFICER
(Further advertisement)

Required as soon as possible. Responsibilities include supervision of Physics/Computer Science CAL Laboratory, adaptation of CAL packages, and development of new packages. Equipment includes 3802s, PETs, Apples and DEC VAX/Gigil terminals. Applicants should be graduates with relevant CAL experience. Appointment is to September 30, 1984 in first instance. Starting salary in range £5,501-£6,800 (rising to £8,085) p.a. plus London Allowance £1,168 p.a.

Further particulars from College Secretary, Queen Elizabeth College, Campden Hill Road, Kensington, London W8 7AH. Closing date May 23, 1983.

CHIEF OPERATOR

CIRCA £8,000

For a mixed installation ICL ME29 CTL 8000 CROMEMCO System 3 ME29 and GEORGE 2 experience essential. Knowledge of Minis and Micros an advantage.

Candidates should have had 4 years' experience, including a senior position within a ME29 installation.

Send full details or apply for an application form to: Mrs J. D. Parr, Personnel Officer, Haden Plc., 7-12 Tavistock Square, London WC1H 9LZ.

(3443)

ANALYST/PROGRAMMERS
CROYDON UP TO £10K

We are an expanding software house with varied and interesting applications who require Analyst/Programmers with a minimum of two years' commercial application experience preferably on mini computers using a high level language.

To join an existing team for projects in the Home Counties.

The applicant would be expected to work on own initiative as substantial end-user. Contact, and on-site work is involved.

Phone direct on 01-898 5419 and ask for Margaret to discuss your application.

(3598)

WILTSHIRE
CHIPPENHAM
TECHNICAL COLLEGE

LECTURER II

THE COLLEGE
SWINDON

LECTURER I

required for September 1983. Lecturers in Computer Studies and Data Processing.

The successful candidate will be required to teach a wide range of courses and will be involved in the development of BEC/TEC Computer Studies Courses.

Candidates should possess relevant qualifications and experience. Further details obtainable from J.B. Petherick, Director, Chippenhams College (Tel. 0246 656001) and J.B. Petherick, The College, The College, Swindon, Wilt. Telephone 0246 656001.

(3598)

Logitix

Logitix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

MICROPROCESSOR DEVELOPMENT INDUSTRIAL SYSTEMS

CENTRAL LONDON: Salaries to £15K

PROFILE: A leading Systems Supplier and Consultancy has retained Logitix to assist with the recruitment of a number of Project Leaders, Applications and Systems Programmers. The major areas of activity focus upon the development of multi-microprocessor applications and the design and implementation of real-time industrial and process control systems. The Company is recognised as a market leader in innovative software and system development and provides a well-defined career path for the technically motivated individual who wants to work in a stimulating and challenging environment.

PROJECT LEADERS: Aged around 30 years and with a minimum of seven years' industrial experience, your career to date should preferably have progressed through Designer level to your current position where you have project control responsibilities. Successful candidates are likely to have current relevant experience within microprocessor systems development or the implementation of real-time industrial control and monitoring systems. In addition, you should be able to demonstrate an aptitude for proposal writing and have participated in project costing and resource management. Whilst the majority of project work is located in Central London there will be occasional U.K. site visits.

APPLICATIONS and SYSTEMS PROGRAMMERS: Aged 22-26 years and with a minimum qualification of H.N.D. or B.Sc. and at least one year's industrial or commercial experience. Ideally, you will have some knowledge of Intel microprocessors using PL-M as the principal programming language with PASCAL, a very useful secondary language. However, candidates who are familiar with other microprocessor systems will certainly be considered. For certain positions, it is mandatory to have an in-depth system programming knowledge of Intel's RMX operating systems and development tools. Candidates with an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with relevant practical experience.

BENEFITS: In return for your personal commitment and technical skills the Company offers an excellent salary together with an outstanding range of ancillary benefits.

APPLICATIONS: Please submit a well-documented resumé or alternatively telephone one of our Consultants quoting Ref: LJS/3.

Licensed by D.O.E.

Lic No. SE 5813

ANALYST PROGRAMMER

West London neg. around £12,000

The major systems development programme of this fast-growing specialist service organisation - part of the largest U.K. leasing/rental group - calls for the recruitment of a business orientated analyst programmer.

Reporting to the Finance Director you will be responsible for ensuring the smooth installation and implementation of the company's new mini-computer based systems including the selection of relevant software and peripherals. This will involve liaison with all levels of management within the UK and with peer groups in the USA. Applicants should have had at least four years experience and be capable of handling all aspects of creating a DP unit - from systems design through program writing to implementation - and of working closely with external suppliers. Recent experience of DEC equipment, ideally using BASIC under RSTS/E, is essential.

The rewards for this "self-management" will be a high degree of autonomy as well as the opportunity for personal development with a highly profitable service organisation. Salary will be in the region indicated but will not prove an obstacle to the right candidate.

Call David Mason Johns today on 01-948 5922 (24 hour answering service) on 01-747 0969 (evenings and weekends) for an application form, alternatively write to him at the address below. Please quote Ref D8334/CW.

(3557)

Work with the best

KPG

01-948 5922

KPG Computer Support Services Ltd.

Cobden House, Park Lane, Richmond, Surrey TW9 2RA

SYSTEMS CONSULTANT



Recognition
Recognition Equipment Limited

Recognition Equipment, a world leader in the field of data entry systems is seeking to recruit a computer professional to join the U.K. systems support group based in their new headquarters in Windsor.

The successful applicant will provide both pre and post sales support to 'blue-chip' clients on a wide range of highly advanced computer based products. Considerable U.K. travel is envisaged with occasional European and U.S. trips.

Suitable candidates will have at least five years data processing experience including the use of assembler languages. The ability to operate in a client oriented role is obviously essential.

The position offers the opportunity to enjoy a high degree of responsibility within a stimulating and challenging environment.

For further information please telephone Andrew Cousins or write enclosing a full C.V.

MCL

McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading, Berkshire

Tel: Reading (0734) 595346 (24 hours)

MAJOR ACCOUNTS MANAGER

BERKSHIRE **ALLOS** c£30k + Car

Our client Altos Computer Systems were formed in 1977 and have shown a spectacular growth to date, with a highly successful range of 8 & 16 bit multi user systems. They are currently trading at levels of 80 million dollars per annum.

In order to sustain this unique growth rate we are now seeking to employ a major accounts manager. Responsibilities will involve the development of existing major accounts but the primary objective will be to generate and grow new business with blue chip companies.

Ideally applicants will be able to demonstrate success in selling mini/mainframe or related hardware products into major accounts. Experience gained with a manufacturer would be particularly relevant.

In return the company offers a ground floor opportunity to join one of the most successful and rapidly expanding (currently producing 1500 units per month) high technology companies in the U.K.

Benefits will include an unusually high base salary, prestige company car, free BUPA and life assurance. The real benefits will derive from working for a company which is already one of the outstanding successes of the 1980's.

For further details telephone or send full C.V. to Barbara Allen to the address below (ref 103).

MCL

McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading

Tel: Reading (0734) 595346 (24 hours)

01-948 5922

SYSTEMS AND PROGRAMMING

CONTRACTS

LONDON

IBM MVS COBOL & MARK IV PROGRAMMER - MAY/JUNE
IBM DL/1 COBOL PROGRAMMERS X2 - MAY
IBM MVS SYSTEMS PROGRAMMERS X2 - MAY
IBM CICS, DL/1, SYSTEMS PROGRAMMERS X2 - MAY
IBM DATABASE ADMINISTRATORS DL/1, IMS - MAY
IBM SYSTEM 34 RPG II MAAPICS PROGRAMMER - URGENT
D.G. ECLIPSE MV 6000 INFOS AND/OR TPMS COBOL PROGS
TANDEM COBOL PROGRAMMERS - ASAP
HP 3000 COBOL PROGRAMMERS - ASAP
ICL 2900 NETWORK ENGINEER - ASAP
ICL VMF COBOL, IDMSX PROGRAMMER - ASAP

MIDDXX

IBM SYSTEM 34 RPG II MAAPICS PROGRAMMER - URGENT
IBM DOS/VSE CICS, DL/1, COBOL ANALYST/PROGRAMMER

NORTH WEST

IBM OS/MFT PL/1 PROGRAMMERS X2 - URGENT
IBM DOS/VSE RPG II PROGRAMMER - URGENT

For details of these and other interesting contracts, contact Lorraine Maddison on 01-948 5922 (office hours) or Walton-on-Thames (98) 45552 (evenings/weekends)

PERMANENT

CICS, DL/1 PROGRAMMERS

c. £12,000
One of our clients in MIDDLESEX is urgently looking for skilled PROGRAMMERS with about 4-5 years practical PL/1 or COBOL experience for an exciting new project. Travel and perks.

SENIOR ANALYST/PROGRAMMER

c. £10,750
A specialist Software House now needs a graduate person with 3/4 years FORTRAN and BASIC experience. Knowledge of system implementation, model-building and database will help in this communications environment. This installation is based in CENTRAL LONDON.

SENIOR PROGRAMMER

NEGOTIABLE
IBM SERIES 1 installation need an experienced RPS person with a background of PL/1 or ASSEMBLER. This Process Control application will offer both technical and programming opportunities. A relocation package is available for this WEST LONDON installation.

SENIOR PROGRAMMER

£10,000 + CAR
This large finance house in MANCHESTER has recently upgraded to IBM 4331 from GSD and need to recruit a RPG II PROGRAMMER. Previous experience of Financial applications is essential and COBOL or PL/1 as a second language.

COBOL PROGRAMMER

to £8,000
2 years programming experience will qualify you to join this Company based in the CITY. You will be part of a project team concentrating on batch systems on an IBM 4341 under VM/SP using DOS/VSE, CICS/VS. The benefits include a non-contrib. pension and a mortgage subsidy.

IBM SYSTEMS PROGRAMMER

c. £17,000
A really experienced CICS, DL/1 person is urgently required for this WEST LONDON site. There are many opportunities to use your skills in this large VM/DOS/VSE installation. Overseas travel to other sites will be required and the rewards are very good.

Please contact DAVID or KEITH at KPG or on 01-747 0869 or 01-399 8163 during the evenings or weekends.

Work with the best

KPG
01-948 5922

KPG Computer Support Services Ltd.
Cobden House, Park Lane
Richmond, Surrey TW9 2RA



ANALYSTS & PROGRAMMERS

CICS TRAINING

CITY £9,500
Two years' IBM COBOL programming experience is all you need to join this major financial establishment based in the City. An INSURANCE or FINANCIAL background would be an advantage, as would any experience of CICS or DL/1, although training will be given where necessary. Company benefits are excellent and include a SUBSIDISED MORTGAGE (after qualifying period), free life assurance, L.V.a and flexitime.

PROG/ANALYSTS

SURREY £12,500+
Well known insurance group based in N. Surrey utilising ICL 2950 range machines are currently recruiting Programmer/Analysts with limited design experience and Analyst/Programmers with at least one project from start through to implementation. Ideally you will have at least 18 months' exposure to ICL Cobol and wish to extend your career towards Analysis or Project management. In return for your expertise you will receive an excellent starting salary and generous benefits including cheap mortgage facilities.

SYSTEMS ANALYST

MORTGAGE £10,000+
Our client, a well-known Life Assurance Company based in the City, is currently looking for a young Analyst to join their on-line development team. The ideal candidate will have eighteen months to two years' commercial experience gained in a financial environment, and will enjoy working on a variety of large projects. Company benefits are excellent and include a mortgage subsidy and an annual bonus.

WANG TRAINING

West London To £13,500
Two companies located in Middlesex and London respectively have current requirements for experienced COBOL Analyst/Programmers. Successful applicants will work on a variety of mini computers in varying environments. Qualifications for these exciting positions are a minimum of 2 years' COBOL on any hardware, particularly WANG, or Hewlett Packard. Salaries are negotiable up to £14,000 for Senior people and all large company benefits will be available.

RPG II/III PROGS

LONDON & HOME COUNTIES To £18,500
Opportunities in the London and Home Counties exist for all levels of RPGII, RPGIII Programmers and Analyst/Programmers. If you have a minimum of one years' experience and feel that your present position offers no real career progression, then you should be interested in the many positions that exist in the Banking, Insurance, Commodities, Petrochemical and Manufacturing Industries. For more details give SBS a call quoting reference GB.1.

ANALYST/PROG

SURREY £12,000+
Major manufacturing organisation in Surrey are now in a position to recruit a Senior Analyst/Programmer to work in financial and marketing applications. The successful candidate will have four years' Cobol programming experience, some analysis and around 2 years' CICS/OLI. This would be a good career move for someone who would like to become increasingly involved in Systems Analysis in a good IBM environment. The Company offers an excellent salary and attractive benefits. Ref. 5812.

RPG III TRAINING

SURREY £11,000
This is a gilt-edged opportunity for experienced RPG II Programmer/Analysts who are looking for their next career move. Ideally you will have been programming for at least 18 months and had a limited exposure to Analysis. Full training in RPG III will be given, as will a continued career development towards Analysis. The opportunity for European travel exists and applicants must be prepared for short term travel.

SNR ANALYST/PROG

BERKS £12,000 + car
A progressive and expanding software house based in a pleasant part of Berkshire wish to add a Senior person to one of their major project teams. Applicants must have either an accountancy qualification or a wide knowledge of accounting systems. This should be coupled with an understanding of micro processor applications, either CP/M or MP/M. Candidates must be able to program in either CIB COBOL or ANSI COBOL.

HONEYWELL PROGS

CENTRAL LONDON £10,000
Opportunities to develop interesting systems using "state of the art" technology await you - if you have two years' Honeywell COBOL programming experience. The ideal candidates will also have a knowledge of IDSII and TDS although training will be given where necessary. Our client can also offer you a pleasant working environment, within a small friendly department, four weeks' holiday, subsidised private pension plan and pension scheme.

CICS TRAINING

WEST END To £10,000 P.A.
International Oil Company based in Central London would like to recruit 2 good IBM Cobol Programmers. The ideal candidates will have around two years' experience, ideally with some CICS, although, training in CICS will be provided. Their Computer configuration consists of an IBM 4341, with DOS/VSE operating system. Conveniently situated in prestige offices, this company can offer excellent career moves for the relevant people. Ref. 5767.

ANALYST/PROG

CITY To £12,000 + Mortgage
This respected foreign bank, located in the heart of the City currently wishes to recruit two fully experienced Analyst/Programmers. Ideal candidates will be proficient in "Basic" and "Basic-4", and will have a good background knowledge of PDP hardware. The bank retains PDP kit running under RSTS/E with AIMS. Preference will be given to applicants with "AIMS" and/or banking experience, although this is by no means mandatory.

IBM COBOL

C. LONDON £EXCELLENT
Our Client, a Central London based Consultancy are looking to recruit good IBM COBOL programmers, to work mainly in the financial sector. They are recruiting at various levels, with 18 months' minimum experience. A superb company that can offer excellent career prospects, variety of work, and the opportunity to work on all new IBM products. If you want more career stimulation, please contact us for details of these opportunities. Ref. 5587.

These are just some of the positions available. If your particular "expertise" or "ideal job" has not been advertised, then give SBS a call and discuss your career requirements with one of our recruitment team.

SBS RECRUITMENT

SCIENTIFIC & BUSINESS SYSTEMS LTD.
32 BEDFORD SQUARE, LONDON WC1S 3EG 01-637 9541 (24 hour)

Database Analyst

Berks to £13K
National retailing organisation requires senior analyst to help develop on-line database systems. Candidates with degree or similar qualifications should have minimum five years' d.p. experience including previous successful involvement in database design. IBM experience desirable but not essential. Good conditions and prospects. Ref. 657

Consultant/Project Leader

South Coast to £12.5K + car
Experienced business analyst required by computer services company to control systems development for clients from feasibility to implementation. Candidates aged 30+ years, with degree or accountancy qualifications, should have strong IBM S/34 or S/38 experience. Attractive location. Excellent prospects. Re-location package. Ref. 538

APL Analyst/Programmers

Midlands £6-12K
Large manufacturing company seeks several Analysts and Programmers with recent experience of APL to develop a wide range of applications. Degree standard candidates are preferred with a minimum of 1 year's d.p. experience. Good benefits. Re-location assistance provided. Ref. 693

Senior Analyst

South Coast to £12.5K
Engineering company require systems analysts to work on IBM S/34 to S/38 conversion and to implement MAAPICS systems on the new machine. Candidates must be experienced in RPG II and MAAPICS; knowledge of RPG III and/or Basic is desirable. Re-location assistance is available. Ref. 691

Write or telephone:
London West Computer Recruitment
Evergreen, Dauntsey, Chippenham,
Wiltshire SN15 4JA
Telephone: (0249) 891114

LCR

London West Computer Recruitment

Technical Sales Support

Berkshire £8.5-10.5K
Computer manufacturer requires several junior and senior support staff for pre- and post sales support activities. Candidates ideally will have worked with many computers on scientific and/or commercial applications. Personality and communications ability are important. Attractive location. Some travel. Good prospects. Ref. 688

IBM Analyst/Programmers

Midlands to £10K
Several manufacturing companies require senior programmers and analyst/programmers with IBM mainframe experience. Cobol and knowledge of on-line database techniques. Installations include RJE sites and multi cpu configurations. Re-location assistance in all cases. Ref. 700

IBM Analyst/Programmers

South Coast to £9.5K
Manufacturing and financial organisations with IBM mainframes seek programmers and analyst/programmers with a minimum of 1 year's Cobol experience. Knowledge of CICS and DL/1 is advantageous. Attractive locations. Salaries according to experience. Re-location assistance. Ref. 701

Systems Analyst

Bucks to £10.5K
Financial services company seeks analyst with on-line mainframe database design experience. Degree qualification desirable but not essential. ICL knowledge an advantage. Minimum 3 years d.p. experience required including at least 2 years of analysis. Excellent benefits including low cost mortgage. Re-location package. Ref. 590

Real Time Project Leaders

West, South, Wales c. £15K
Major companies developing real time projects in telecommunications, process control, telemetry and industrial automation require experienced team/project leaders. Degrees in computer science/engineering are essential; low and high level real time language skills are required. Excellent prospects. Re-location assistance. Ref. 614

Real Time Programmers

Wilts, South £8-11.5K
Successful companies engaged in developing telecommunications systems require junior programmers. Real time experience preferred. Appropriate degrees essential. DEC and/or Intel knowledge an advantage. 2 years' experience of a low level or block structured high level language is required. Excellent prospects. Re-location assistance. Ref. 613

Design Engineers

South, West to £12K
Vacancies exist for hardware design engineers with small/medium companies engaged in the development of micro processor based products for medical systems, telemetry, and industrial and office automation systems. TI, Z80 or Intel experience plus some programming ability preferred. Excellent opportunities. Re-location packages available. Ref. 698

Real Time Process Control

South Wales £11.5 to 13.5K
Major companies have vacancies for experienced real time software engineers at project leader and manager level. Computer science/electronics/engineering degrees essential together with knowledge of DEC, PDP or VAX and/or Z80 or Intel micro processors. Good salaries. Re-location assistance. Ref. 692

IDEC IS...

...Excellence and Innovation in Voice and Data Communications Technology.



Systems Engineers Up to £12,000 Hertfordshire

IDEC, an international systems development centre for the new communications technologies, has recently consolidated its operations in a multi-million pound purpose-built office complex in Stevenage. This, combined with our current plans for expansion which are based on a significant increase in business, gives us the opportunity to recruit a number of experienced systems engineers. Our reputation for excellence and innovation is firmly based on our expertise in voice and data communications technology. The current diversity of customers' requirements means that we can offer our staff experience and responsibility in all aspects of electronics particularly in the areas of computer-based transmission control equipment and office communications

systems (including Local Area Networks and Advanced PABX Developments). Professional engineers with up to 5 years' experience covering both software and hardware disciplines should consider the IDEC opportunity, our rigorous approach to systems engineering and project management and our commitment to developing the careers of our staff. For further information please phone Chris Turner on Stevenage (0438) 738020 or write to him with full career details at: IDEC, Six Hills House, London Road, Stevenage, Hertfordshire SG1 1YB.

ITT - IDEC

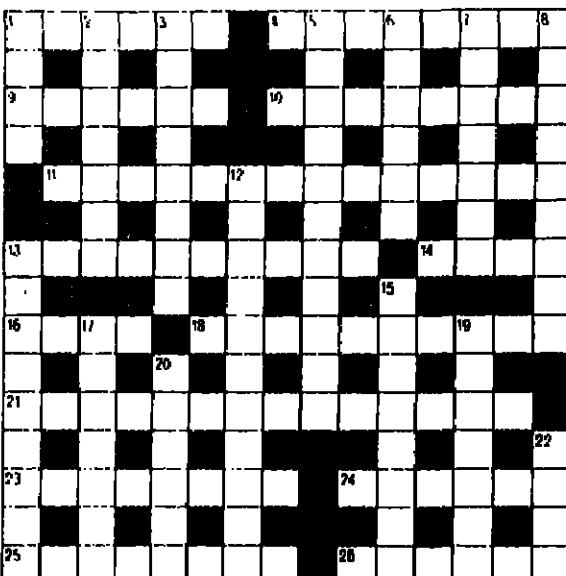
0438 738020

CROSSWORD

Prize Crossword No 40

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry opened. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS, by first post Friday, May 13. Please use a ballpoint to complete the crossword, and include a telephone number at which you can be reached during the daytime.



Name..... (Miss, Mrs, Ms, Mr)

Address.....

Telephone.....

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed..... Date.....

- ACROSS**
- It's used for colouring beam in study (6)
 - Salis one thanks before group goes back (8)
 - Firearm encountered with Welsh flower stuck inside (6)
 - A rabid Red, I'm one to be overbearing (8)
 - Our rail system, it is horrific - a topic for a UK citizen? (7,7)
 - Refuses to handle vessels in accident-prone areas (5,5)
 - Engrave on a plate a two-master with no prow (4)
 - Frame made from southern tree (4)
 - It measures angles for a farm vehicle (10)
 - Depart at midnight? Don't tell (5,2,3,4)
 - Press, etc., stirred up phantoms (8)
 - A painter has brought back a lot of sand (6)
 - Section wanted? Side out somehow (8)
 - Engineers left an account (6)
- DOWN**
- Talk fondly around

- RULES AND CONDITIONS**
- Each competitor may submit no more than one entry.
 - The competition is open to all readers of Computer Weekly with the exception of the staff of Business Press International Ltd, any printers employed by them or the near relatives of any such staff.
 - The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
 - Winners will receive their prizes during the month following the competition.
 - The decision of the editor on the interpretation of the rules and conditions and on all matters shall be final. No correspondence will be entered into.

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HARDWARE/SOFTWARE ENGINEERS To £13,000+

Several of our clients, particularly in the Defence, Engineering and Communications environments, are seeking Software Engineers and Hardware Engineers with a minimum of 2 years' experience on mainframes, minis and/or micros. If you have had experience of ASSEMBLER, FORTRAN, COBOL, ALGOL, PASCAL, BASIC, C, C++, CONTEXT, MACRO or any Assembly language, we would like to hear from you. LOCATIONS: THROUGHOUT THE HOME COUNTIES.

SYSTEMS PROGRAMMERS & EXCELLENT + BENEFITS

At least 2 years' experience on IBM mainframe equipment with DOS/VSE or MVS experience is required. ASSEMBLER & database experience would be useful. LOCATIONS: SURREY, HERTS + LONDON.

COBOL PROGRAMMERS £8,000-£13,000

A senior ICL COBOL Programmer is required to set standards and supervise a group of programmers working on stock control and invoicing applications etc. LOCATION: NEAR GATWICK. Two ICL/VME programmers are required for WEST SURREY.

SYSTEMS ANALYSTS £10,000-£11,500

An ICL installation in WEST SURREY requires a Senior Analyst for financial, accounting and insurance applications with database experience for development work. 2 Analysts are required for an insurance company with an IBM mainframe in NORTH SURREY. One analyst is urgently required with IBM System 38 or System 34 experience for CENTRAL SURREY and SOUTH COAST installations.

AMES PERSONNEL (3546)

Please telephone for further details and an application form.

6 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE: REIGATE (07372) 22219 or 22210

DEPARTMENT OF COMPUTING AND MICROPROCESSOR APPLICATIONS LECTURING OPPORTUNITIES IN COMPUTING

Vacancies exist at Principal Lecturer and Lecturer Grade II/Senior Lecturer level. At least one of those appointed must have teaching experience at honours degree level in Data Processing and Systems. Other candidates should offer expertise in one of the following fields: database, real-time systems, networking, program design and system design.

Salary scales: Principal Lecturer, £11,931-£15,018; Lecturer Grade II/Senior Lecturer, £9,866-£12,816.

Further details and form of application from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date 19th May, 1983. (3634)

TRENT POLYTECHNIC

ESSEX WATER COMPANY SENIOR COMPUTER OPERATOR c £7,400

Our computer installation currently has two ICL 2865 computers which run under DME/2 environment. A large TP network is supported together with an advanced IDMS database application. Development plans include other IDMS applications for use within the water industry and possible conversion to VME/2800 environment. We urgently need to fill two vacancies as follows:

COMPUTER OPERATOR c £6,500

For this position, at least one year's operations experience in an ICL environment is essential. The candidate should be educated to at least 'O' Level standard. Salary is in the range of £5,858 - £7,512, including London Weighting, the above shift payments.

Please write to Mr J. A. Wilkins, Data Processing Manager, for an Application Form or telephone him on extension 288 or 321.

ESSEX WATER COMPANY

342 SOUTH STREET ROMFORD
ESSEX RM1 2AL

16 ROMFORD 46076



More than meets the eye...

DATABASE ADMINISTRATOR/PROGRAMMER to £10,500

Most people know us as the security firm that cares. And we do. However, did you also know that we own the largest Ford truck franchise in Britain, an exclusive lot, a hotel group and even an industrial cleaning service amongst our diverse interests?

These services inter-relate to form an expanding and highly successful group with an annual turnover in excess of £237 million worldwide.

Data processing will continue to make a significant contribution to our success, whether it be in the development of systems or national and international telecommunications networks.

We are now seeking a database administrator/programmer to join the database team. We have dual ICL 2960's running under VME, using IDMS to support management and financial systems and DRS 20a to provide a nationwide communications network.

It is therefore important that you will have gained at least 2 years COBOL programming experience in a similar environment using IDMS with DDS being an added advantage.

In undertaking the programming aspect of the position, your responsibilities will also include ensuring the overall effectiveness of the database in meeting both the users' and technical group's requirements.

If you are looking to join a small team with projects offering variety, challenge and scope for personal development and believe that you match our requirements then we would like to hear from you.

In the first instance either ring me, Roy Bell, on 01-365 1298 or send me your CV with a brief covering letter outlining your suitability for the position. In return, we will send you further information about ourselves and this position.

SECURICOR

583 Fulham Road, London SW6 5UA

UNIVERSITY OF LONDON GOLDSMITHS' COLLEGE COMPUTER CENTRE PROGRAMMER

Applications are invited for the post of Programmer within the Computer Centre. This post is externally funded for the development of an automated library circulation system.

The person appointed will specialise in microcomputer networks and will work on an established project to automate library circulation control. Salary within the range £7,674-£9,866 (inclusive of 12% per cent shift allowance). Scale 2/AP2 with a bar at the maximum of Scale 2.

Write for further details to the Personnel Officer, University of London, Goldsmiths' College, London SE14 6NW. Closing date for applications 28th May, 1983. (3639)

METROPOLITAN BOROUGH OF Rochdale An Equal Opportunity Employer

TREASURER'S DEPARTMENT

The Authority runs a variety of batch and on-line systems on a 6Mb 2868 under VME 2800.

F729 COBOL PROGRAMMER
£5,352-£9,231
(Career AP2/501 with a bar at the maximum of each grade). Starting salary dependent upon experience. Capable COBOL PROGRAMMER is required and preference will be given to those candidates with VME and TP experience.

F730 COMPUTER OPERATOR
£5,002-£8,571
(Inclusive of 12% per cent shift allowance. Scale 2/AP2 with a bar at the maximum of Scale 2). Experience in operating ICL equipment is required, preference being given to those with a VME background.

Application forms available (quote ref. no.) from the Chief Personnel Officer, 20 Old Hall, Municipal Offices, Smith Street, Rochdale OL16 1XG. Tel: Rochdale 47474, Ext 9522 to be received not later than Wednesday, May 16th, 1983.

Temporary PROGRAMMER in Computer Graphics

One year appointment

An opportunity for a computer graphics specialist to become responsible for the development and implementation of the relevant software in particular, for programme suitable for the Polytechnic's Faculty of Art and Design.

A degree in art and design subject is expected, together with substantial experience in modern computer operations systems, computer graphics techniques, FORTRAN and other higher level languages.

Salary according to experience at the appropriate point on the scale £5,042-£9,222.

For further information and application form, please write to: Personnel Officer (ref. 1141), Huddersfield Polytechnic, 114 Oakdale Stile, London NW1 9PL. Closing date 18 May 1983. (3628)

INFORMATION TECHNOLOGY INVESTMENT ANALYST MANCHESTER STOCKBROKERS

As leaders in the provision of investment research on the communications and computer industry to institutional investors, we need another person from the industry to maintain this.

The job involves:

- Identifying industry trends and investment opportunities;
- Visiting companies and evaluating management and product potential;
- Publishing background research and company appraisals;
- Marketing recommendations to banks, insurance companies, trusts, etc.

You are likely to have worked in an analytical, planning, or market research role and will need maturity and credibility to develop business in a competitive environment. An attractive salary is offered together with an annual bonus, non-contributory pension, and excellent prospects. If you wish to join a small and enthusiastic team within a medium sized firm of stockbrokers then contact:

Neil Barton,
Henry Cooke, Lumsden & Co.,
Parkwright House,
Parsonage Gardens,
Manchester M60 2AH
Tel: 061-634 2332 (3627)

Do you have a Sales Pedigree?

IF SO, JOIN THE THOROUGHBREDS AND EARN OVER £24K PER ANNUM

Unrivalled in virtually every category of comparison, this company offers users a complete range of Information Systems and state-of-the-art software capabilities. To maintain their supremacy in

the U.K. we are assigned to recruit the following key sales personnel, all of whom will earn a 5 figure basic salary, substantial long term guarantees and company car or car allowance.

Large Systems Sales

N. WEST, YORKS, N. & E. MIDLANDS

Living within a 50 mile radius of Leeds, you should have a 1st class record of achievement over at least 3 years in the sale of large, sophisticated mini computer systems to either end users or OEM's.

Major Accounts

MANCHESTER

The prime requirement is to have opened and developed Major Accounts negotiating at the highest levels. A positive and mature outlook combined with a high degree of self-motivation is essential.

OEM Sales

SCOTLAND & MIDLANDS

If you have a minimum of 2 years with a major manufacturer, do not ignore these opportunities. You will join an established and successful sales force which has the benefit of full local support both in Scotland and the Midlands.

To be a part of this winning team, ACT NOW!—for a completely confidential discussion.

Telephone 061 236 1157 during business hours, or Evenings until 9p.m. and weekends, telephone JEFF WALTON on 061 962 0002 or ROY TORRES on 0422-823153

INTERFACE
RECRUITMENT & SELECTION CONSULTANTS LTD

Manchester House, 86 Princess Street, Manchester M1 6NG. Tel: 061-236 1157

REAL-TIME SOFTWARE

ADVANCED DATA COMMUNICATIONS

A WORLD OF DIFFERENCE TO YOUR CAREER

South West Coast.

An established and profitable leader in the high technology industry is currently seeking to expand its research and development teams.

The positions offer the opportunity to pioneer new techniques in a number of advanced communication projects.

Chief Software Engineer

Earnings to £15,000

An enthusiastic and determined person who can demonstrate both technical and project management skills is required for the prestigious post of Chief Software Engineer. You will probably be a Project Leader in a communications or telecommunications environment ideally with four years real time software design experience. Reporting to Senior Management you will be responsible for the overall guidance of a number of teams of experienced professionals.

The post offers you every chance to develop your experience in financial, technical and managerial areas.

A generous relocation package is available for all of these positions together with attractive benefits. For further details telephone Miles Richards on 01-938 1804 (24 hrs)/01-647 2385 (7 pm - 9 pm), or write to him at the address below.

Project Leaders

Earnings £11,000 - 14,000

The continued expansion of the design teams coupled with internal promotions has now created openings for project leaders.

If you are presently a Senior Programmer or Designer with some supervisory experience in a real time environment, this will be your opportunity to control and lead a highly motivated team.

Software Designers

Earnings £10,000 - 12,000

You will join a small and professional design team with responsibility for developing communications systems from initial design through to implementation.

Identify you will have three to four years experience in real time programming or software design and development, with an exposure to low level assembler or high level languages. The growth and professional standing of this company will ensure you of a career development unlikely to be surpassed.

IPP

Information Processing People

20 Kensington Church Street, London W8 4EP. Telex 22861

SALES BIT

Quality of Management — 50

Weighing up the job seekers

PRODUCING suitable sales applications is quite an achievement, particularly in the computer industry with its profound shortage of competent salespeople. Yet this could be only the start of your recruitment problems, for now you have to "sort out the sheep from the goats".

If you have a personnel manager with a good understanding of salespeople, let him or her sort out the initial response. Personnel people are usually able to identify the valid applicants, the time-wasters, the job hoppers and those who should never have applied in the first place. Often they are more aware than the sales manager about any inadequate salespeople who are already in the company's employment.

So they generate a standard letter and tell those who do not qualify — thanks, but no thanks.

To the others, they send out an application form, and this is where the role of the sales manager is likely to begin. Don't let the personnel department simply send out that tired old application form. Augment it with a single sheet containing questions that make a real contribution to the selection process as far as salespeople are concerned:

How long have you been selling? How long selling our product in our market place? What formal training have you had? What has been your achievement against sales targets over the past four years? Provide names of some companies to which you have made significant sales in the past two years. What kind of job are you really seeking? — and so on.

It can be a considerable aid to deciding who should be interviewed.

Having decided upon those you want to see, there are some important considerations to be made before the first arrives at your office.

Job Specification: If you haven't created one yet, now is the time to do so. You can't expect an applicant to get enthusiastic about working for a sales manager who doesn't have detailed knowledge of the job. Can-

COURSES

WITH the aim of teaching accountants how to program in Basic, a course, Computer Programming for Accountants will be held at Glasgow College of Technology from June 7 to 9. It is organised by the Institute of Chartered Accountants of Scotland and the fee is £245 plus £36.75 VAT. This includes documentation, coffee, lunches, afternoon tea, and unlimited computer time. Each participant will have exclusive use of a visual display unit and access to the full facilities of a large computer. Hobbyist microcomputers will not be used. Participants will receive several programs and will have assistance from a number of tutors, all with wide experience of commercial computing. Further details from the organisers on 031-225 5673.

PUZZLE ANSWER

THE letters used are PROBLEMIST, and an "orderly" sequence 0 to 9 written beneath these capitals left-to-right does indeed provide immediate identification.

SMR
Sales & Marketing Recruiters Ltd
A Sales and Marketing Recruitment Company

SALES EXECUTIVES
CONSULT THE CAREER DEVELOPMENT SPECIALISTS

When you are dealing with the major factors in your life you can only afford the best, and few things are more important than the development of your career. Certainly, that is how the major computer manufacturers feel about their personnel selection and why such companies as CONTROL DATA, COMPUTER TECHNOLOGY, DATA GENERAL, HONEYWELL, PERKIN ELMER, REDIFFUSION, SPERRY UNIVAC and many others continually use our organisation for the recruitment of experienced sales people.

We fully understand the needs of such companies as well as knowing about the many job opportunities that never appear in the press. These well respected names depend on our professional skills and confidentiality. Can you afford less?

Contact: Alan Williams, Peter Hubble
Allan Scott or Roger Dodd — ANY TIME!

LONDON & SOUTH **MIDLANDS & NORTH**
25 Oldfield Street, London W1P 3JH
31-33a Street, Leicester LE1 1JH

Ogwr
Borough Council

Applications are invited for the following posts:
TREASURER'S DEPARTMENT
COMPUTER MANAGER
Salary Grade: P.O.T. (3-7) — £10,071 to £11,184 P.A.

The Council requires a person with enthusiasm to supervise the computer operations throughout the Authority. The post offers an exciting opportunity to shape the development of a computer operation, where extensive development of on-line systems and distribution processing is envisaged. The ability to liaise with all levels of management in user departments is of vital importance and knowledge of ICL ME 28 Computers is essential although the Council is now developing into other compatible microsystems.

An essential user car allowance is payable. Temporary housing accommodation and removal expenses, lodging allowance and/or assistance with legal costs are available in appropriate circumstances.

COMPUTER AUDITOR
Salary Grade: A.P.S. £7,791 to £8,328 P.A.

Applications are invited for the newly established post of Computer Auditor. This post is with the Audit Section and although the work will mainly be on Computer Audits, the successful applicant may be required to carry out other audit work. Analysis or programming experience is essential and experience of audit work is desirable. Temporary housing accommodation, removal expenses, lodging allowance and/or assistance with legal costs are available in appropriate circumstances.

Application forms which must be returned to the Personnel Officer by Friday, 20th May, 1984, are obtainable from him at the Municipal Building, Queen Street, Bridgend, Mid Glam. CF31 1LX. Tel: Bridgend (0956) 82141, ext. 3208.

Convincing of members, either directly or indirectly, will disqualify a candidate.

FAST GROWING SOFTWARE SPECIALISTS ...

... need talented Analyst/Programmers to play key roles in an exciting programme of planned expansion.

The company is internationally recognised as an innovative leader in the provision of software for communication purposes between IBM installations.

Analyst/Programmers — West Yorkshire

To join a small team based in the pleasant town of Otley handling a wide variety of new technology design and development projects. Around 25 years programming experience (including at least 12 months involvement with IBM 3438) is essential together with an interest in communications. Salaries up to £11,000.

Sales Support Analyst — London

To provide "front line" technical support to sales personnel and customers in the London area. This will involve feasibility studies, installation and service, demonstrating the software, user training and the preparation of quotations. You will need 24 years relevant experience in a close user/customer contact environment together with some understanding of O&M techniques. Salary around £10,000.

These jobs all offer opportunities to travel overseas and the chance to join a dynamic organisation with exciting future prospects.

Contact: Julie Peake on Leeds (0532) 445131, PER, Westminster House, Boyd Street, Leeds LS1 5BE.

Applications are invited from: **PER** Executive Selection

smis

PROGRAMMERS/SENIOR PROGRAMMERS

Salary scale to £9,500 p.a.

As part of Sears Holdings we provide DP services for group companies covering a wide variety of applications.

The installation is based on an IBM 3081 and 3031 AP with laser printers and 3380 disks. A purpose built computer centre is under construction for completion this year when an IBM 3083 will be installed.

Due to internal transfers within DP we have vacancies for programmers with a minimum of 18 months COBOL experience. The successful applicant will join project teams developing systems using JSP techniques and ROSCOE, each programmer working from their own terminal. Prominent in our developments is the use of CICS and DL/I. Currently under evaluation in the installation is the MAESTRO development work-station.

Progression is based on personal achievement, and in addition to regular salary and performance reviews the company offers an excellent working environment plus a generous fringe benefits package including relocation assistance where applicable, subsidised meals and free transport to many parts of the Leicester area.

For an application form ring Leicester (0533) 877051 quoting ref: HO 148

SEARS MANAGEMENT INFORMATION SERVICES
PO Box 114, Sunningdale Road, Leicester LE3 1UR

TWO Programmers

required to work at School Computer Development Centre, Birchover Road, Bilborough, Nottingham in order to develop software for use on the BBC microcomputer in schools with particular reference to the area of special educational needs. An interest in educational software is desirable. Salary circa £7,000.

Write for further details to: The Inspector for Computer Education at the above address.

university college of swansea

Microprocessor Centre Manager
Applications are invited for the post of Manager for the Swansea Microprocessor Centre. The Centre is established in the University College of Swansea and provides a service to industry and to the College. Applicants should have a degree, or equivalent qualification, together with appropriate experience with microprocessors and their applications.

Responsibilities of the post include the day-to-day running of the Centre, liaison with users and the continuing development of the service. The post is suitable for a person with demonstrable technical competence who is seeking to extend and apply managerial skills.

The salary will be on the scale £10,670-£13,568 per annum together with USS/USDP8 benefits.

Application forms (three copies) and further particulars may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea SA2 8PP, to which they should be returned by Friday, June 15, 1984.

DAVY COMPUTING LIMITED
would like to hear from **FORTRAN/COBOL PROGRAMMERS**

to fill a vacancy within the COMPAID Division. This software package is a market leader in the material take-off and isometric drawing of pipework used in process plants, and is an interesting mixture of 'commercial' and technical programming.

The work of the Division includes:

- 1) Maintenance support for existing COMPAID clients.
- 2) Development into other application areas of materials management, eg: Procurement. A prime 550 is the development computer, using FORTRAN.

Programmers are encouraged to develop their understanding of the COMPAID product as well as their computing skills. There is a close working relationship between programmers, sales staff and engineers. Candidates should have four years' industrial programming experience, including two years' FORTRAN, preferably FORTRAN 77. Davy Computing Limited is a Davy Corporation company which is one of Europe's largest groups providing a total engineering and contracting service in the field of heavy capital plant.

Applications, including a full CV to:

Mrs D. Baker
Davy Computing Limited
Moorfoot House
2 Clarence Lane
Sheffield S3 7UZ

Davy
Computing Services Association

CONTRACTS

IBM COBOL ASSEMBLER IMS TCAM
CORAL 66 REALTIME PROGRAMMERS
ICL 2900 IDMS VME/B COBOL
DEC PDP 11 BASIC+ (INSURANCE)
IBM 8100 COBOL
IBM COBOL MVS ANALYST/PROGRAMMERS
IBM IMS DB/DC COBOL ANALYST/PROGRAMMERS
IBM CICS COBOL PROGRAMMERS
ICL DRS CICS COBOL PROGRAMMERS
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NORTH WEST
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CAREER OPPORTUNITY WITH LEADING BRITISH MICRO MANUFACTURER IN OXFORD

SALES OFFICE MANAGER
£10.4K to £15.7K

We hold a strong market position in education, research and engineering. We are developing our new generation of computers and instrumentation products for these markets and will be breaking new ground in other markets both in the UK and abroad.

As the organisation develops to meet new sales and marketing challenges, the demands on the existing sales office resource will increase significantly. The sales office currently covers three main areas of telephone sales, technical support and order processing and will in future function as a shared selling and support resource to sales and marketing managers from different market areas.

A change to the current management structure creates a new role for a Sales Office Manager to manage, maintain and develop this resource.

The new post calls for someone with sound office administration experience who can train and develop a mixed ability group and maintain a high level of motivation in a pressured environment. You will be responsible for monitoring and improving standards of performance. You will also have responsibility for the day to day personal welfare of the people reporting to you.

If you are interested in this vacancy please contact Polly Keane on Oxford (0865) 726136 or write for an application form, quoting ref: SOM/CWS

RESEARCH MACHINES
MICROCOMPUTER SYSTEMS
RESEARCH MACHINES LTD Mill Street, Oxford OX2 0BW Tel: (0865) 726136

OPPORTUNITIES WEST OF LONDON

SWINDON NEWBURY READING SLOUGH
M4
M3
FLEET CAMBERLEY STAINES
BASINGSTOKE

Communications Programmer
X25 **SURREY** **to £15K**

Our client is at the forefront of remote data communications technology. A communications programmer is required to be responsible for design thru to implementation (including coding and testing) of the X25 interface to the PSS public data service. He/she will be well versed in assembler (ideally MACRO 11) and have a good understanding of communications. This exciting role offers a high starting salary plus the opportunity to be involved in sales support activities. Ref: K17

Sen. An/Prog. REAL TIME **READING** **to £10K**

A Market Leader in the design and manufacture of high quality data capture systems, seeks an additional senior analyst programmer. The successful candidate will have sound experience of real time applications, including assembler on DEC, INTEL or Z80. PASCAL would be advantageous. He/she will have had previous supervisory experience, be capable of planning projects and scheduling manpower, and enjoy direct customer liaison. This will involve a wide variety of non-defence projects in a pleasant in-house environment. Ref: K78

ICL VME Specialist **BERKSHIRE** **£10K-£14K**

Leading international systems software company is currently developing a new range of software products for the ICL VME operating system. Candidates should have a sound knowledge of the VME system, be familiar with SFL and have experience of languages such as COBOL or PASCAL. In return, the company offers a career position within an innovative software environment together with the opportunity to broaden your knowledge of software and hardware products. Ref: AC5

BASIC Programmers **BERKSHIRE** **to £9K**

A fast expanding and highly successful computer services company seeks to recruit programmers with between 1 and 3 years BASIC experience in a commercial environment. You will be actively involved in developing commercial systems on a variety of minis and micros. Career progression in this stimulating environment is excellent with an early opportunity to move into design/teach leading role. Ref: AC10

Sen. Programmer ME29 **N. HANTS** **to £10K**

A specialist in the storage and distribution of temperature controlled products to national food multiples is embarking on an ambitious development phase, including plans for DATA DICTIONARY, IDMS and networking at a later date. A senior programmer is required to augment their ME29 team using RANGE COBOL. A sound knowledge of MTS or TME/TP is essential. Benefits include good salary, pleasant environment, flexible hours, realistic career development and, of course, the opportunity to learn new skills. Ref: AT11

Programmer DEC RT11/CTS300 **WEST LONDON** **to £8,500**

Our client, a multinational management service organization, with a turnover of \$800,000,000 develops advanced systems for particular market sectors using a mixture of hardware (DEC, IBM) software and telecommunications facilities. An opportunity has arisen with their Travel and Leisure division for a Programmer to work as part of a team on the development of Hotel Reservation Systems. Programming experience under the RT11 or CTS300 operating system is essential. The position offers the opportunity to broaden experience and progress into either a client contact role or a more senior software development position. Ref: KX10

MCL
McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading, Berkshire.
Tel: Reading (0734) 595346 (24 hours)